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Purpose of the Series

The aim of this publication is to provide an opportunity for students to publish the findings of their undergraduate or postgraduate work. Guidance on publication will be given by staff who will act as second authors. It is hoped that by providing a guided transition into the production of papers that students will be encouraged throughout their future careers to publish further papers. Guest papers are welcomed in any field relating to the Built Environment. A template will be provided on request.
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EDITORIAL

Within this third volume papers are presented from all levels of students within the Built Environment discipline. Two papers are produced by recently graduated students based upon their final year dissertations, four papers from recent Masters level students and two from current doctoral students of the University.

This wide range of papers has increased the size of the journal considerably and reflects an interest in circulating to the wider audience the findings of ongoing or recently completed academic work. The papers within this edition are on a varied range of topics and it is hoped that readers find them interesting and informative.

As always as Editor of the edition I would like to thank the effort put into the publishing process by the contributing authors and the review team, especially given the volume of material represented here. Without the help and support of colleagues none of this would be possible.

Dr Elizabeth Laycock
Editor, Built Environment Research Transactions

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PURPOSE BUILT STUDENT ACCOMMODATION: CHANGING THE FACE OF STUDENT ACCOMMODATION IN SHEFFIELD

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ABSTRACT

The supply of Purpose Built Student Accommodation (PBSA) both nationally and within Sheffield, has increased considerably over the last decade and has played an important role in meeting the demands of both students and the Universities.
This paper examines the current dynamics of the PBSA market in Sheffield, the effect that such accommodation has had upon the remainder of the city's student accommodation, and the extent which the supply and demand may fluctuate in the future, especially in the face of recent changes made to the higher education sector. These questions were explored through interviews with PBSA providers, student landlords/agents, along with representatives from both Sheffield Universities as well as Sheffield City Council.
The paper concludes that PBSA has had a substantial impact upon the student accommodation market in Sheffield. Whilst facilitating University growth it has also benefited both the student and landlord. However, much uncertainty hangs over the future of student demand in light of increasing University fees, which could have major implications for both PBSA providers and private landlords.

Keywords: Student Accommodation; PBSA; HMO's; Demand; Supply.

INTRODUCTION

Universities are becoming larger and more commercial establishments in order to survive in a competitive market where service to students is paramount. The rising cost of a University education has increased student expectations and student accommodation is one area of provision that Universities have had to re-examine by redeveloping or refurbishing parts of their existing stock or reaching out to private purpose built student accommodation (PBSA) providers to ensure the quality of student accommodation at a time when supply was being increased to satisfy the growth in student numbers. This paper explores the extent to which purpose built student accommodation has altered and affected the student accommodation market in the city of Sheffield.
The sector has undergone rapid growth whilst proving relatively resilient during the recent economic crisis (Knight Frank, 2011). This follows increasing student numbers: UK saw a 34% increase in UCAS applications between 2005 and 2010 (Knight Frank, 2011) and between 2009/10 to 2010/11, a

4% increase in student numbers was achieved (CB Richard Ellis, 2011). The greatest demand is coming from international students and this is expected to continue to grow as the tuition fee increase for UK and EU students helps to stabilise international fees (BBC, 2010). If, as expected, demand from prospective home students drops over the next couple of years, International students may come to play a crucial role in financing Universities.

The growing student accommodation sector has received increased interest from investors, developers and private purpose built student accommodation operators over the last decade. As the demand for student accommodation increased, major developers and PBSA management companies emerged (Unipol and NUS, 2010) and latest figures suggest that the UK Purpose Built Student Accommodation Sector now has a total value in excess of £20 billion.

The demand for student accommodation appears heavily influenced by the circumstances of the student, such as ‘the year of study, level of degree course, domicile and institution’ (GVA Grimley, 2010, p.3). According to GVA Grimley’s report, the private rented sector accounts for over 40% of student’s housing needs, whereas University owned and operated halls account for 20% of all students housing needs. Of this number 7% reside in private purpose built student accommodation, with the popularity of self-catered with en-suite accommodation having overtaken single self-catered rooms (Unipol and NUS, 2010). The report supports the traditional ‘rite of passage’ that students appear to follow when choosing their accommodation whilst at University. First year undergraduate students and international students are the primary candidates to reside in halls of residence or private built student accommodation, whilst older undergraduates and postgraduate students prefer to rent in groups from a private landlord in the traditional student housing market (GVA Grimley, 2010). Nevertheless it has become increasingly apparent that purpose built student accommodation providers are aiming to attract students who would usually rent from a landlord within the student housing market (Hubbard, 2009). Hubbard (2009), also notes the negative effect of PBSA on the rest of the student accommodation sector, challenging the claim that substantial amounts of new build accommodation would have negligible effects on problems of concentration of Houses in Multiple Occupation (HMO's) (Atkins Consulting, 2004).

Studentification has been defined as “the influx of students within privately rented accommodation in particular neighbourhoods” (Smith, 2005, Page 73) creating problems for local residents, such as noise pollution, petty vandalism, pressure on parking…etc. Local opposition towards student housing seems to result from the number, distribution and concentration of HMO’s in an area (Kenyon, 1997). “In Birmingham, Exeter, and Sheffield, the opposite approach has been taken, with ‘areas of restraint’ designated to encourage the building of purpose-built accommodation beyond the main area of HMO concentration” (Hubbard, 2009, p.1909). In this respect, PBSA may have the effect of relieving local housing markets, saturated with students and drawing them towards living in purpose built student accommodation, ‘purpose built-developments appear something of a panacea for the problems associated with concentrated student rental in HMO’s’ (Hubbard, 2009, p.1909). This is a changing market but PBSA has come to play an important role, catalysing change not only within the student accommodation market but within the Higher Education sector as a whole. It has allowed Universities to expand whilst relieving pressure upon the traditional student housing market.

METHODOLOGY

To explore the issues surrounding PSBA in Sheffield data were initially gathered by a questionnaire delivered electronically to students studying in Sheffield which generated 132 responses (see Figure 1). In addition semi structured interviews were carried out with four PBSA operators, four landlords/lettings agents, three representatives from the student accommodation offices from both Universities in Sheffield and a representative from the City Development Division of Sheffield City Council. The recorded interviews lasted for around 30 – 35 minutes. Further quantitative data on the supply of accommodation was also provided by the University accommodation offices.

Quantitative data from the online questionnaires were recorded in a spreadsheet. Analysis of data gathered through interviews took place continuously through the transcription of interview recordings going through a process of physical reduction, involving ‘sorting, categorising, prioritising and interrelating data’ (Collis and Hussey, 2003, p. 262) and conceptual reduction involving a colour coding of the interview summaries in order to pick out important and recurring themes. Morse’s (1994) process of ‘synthesising’ along with Lindlofts’ element of ‘explaining’ were also undertaken, the former comprising of the drawing upon different themes gathered from the research in order to form integrated patterns and an explanation of what is actually occurring.

Year	Responses
1st Year	102
2nd Year (if applicable)	86
3rd Year (if applicable)	53
4th Year (if applicable)	28
5th Year (if applicable)	5
6th Year (if applicable)	3
Masters (if applicable)	25
PhD Year 1 (if applicable)	2
PhD Year 2 (if applicable)	0
PhD Year 3 (if applicable)	0

Figure 1: Breakdown of Questionnaire Responses

DISCUSSION

This section explores the data gathered on the supply of and demand for PBSA in Sheffield, both historically and with some reference to future trends. Current demand is examined in further depth to explore student preferences and in particular the rite of passage hypothesis highlighted by GVA Grimley (2010). Some consideration is given to the wider impacts of the growth in PBSA in terms of quality and price on other sectors as well as the impacts on the wider community and the spatial distribution of student accommodation.

Supply data gathered from the university accommodation offices shows that PBSA development in Sheffield appears to have been at its peak in 2006, with 1,962 beds having been completed. The development of new beds started to slow down in 2007 followed by pronounced drop in 2008. This may have been caused by the recession which could have left construction on many developments suspended, due to insufficient funding. Development volume then appears to have recovered in 2009 but with little development in 2010.

Many argue that PBSA is contributing towards an oversupply of total student accommodation stock within the city of Sheffield. Letting Agent/landlord 1 identifies saturation “We’ve got all the private landlords with all the residential type accommodation like you see here on Ecclesall Road and we’ve also got all the purpose built stuff so now there is an oversaturation without question.” (Letting Agent/Landlord 1, 2011)

“There is an oversupply now (of student accommodation)…there was planning permission granted for a small one on the Ecclesall Road this week, there’s planning permission considered or likely to be granted shortly for an 800 bed ‘student village’ off the Ecclesall Road anytime now…which is astonishing quite frankly because there is an oversupply” (Letting Agent/Landlord 3, 2011)

Such an oversupply does not appear to deter potential providers: “I think what you’ll find is that the private providers especially are very much on the ball. So they’ll only build where there is a market to build.” (PBSA provider 2) A viewed shared by another letting agent/landlord “We’re not at oversupply yet but if it continues at the level it’s going at, within I think 1 to 2 years it would be at oversupply.” (Letting Agent/Landlord 4)

Letting Agent/Landlord 1 suggests that the saturation of student accommodation within the student housing market hasn’t been helped by the economic climate allowing larger landlords to buy properties which have decreased in value as well as making it easier for smaller landlords to enter into the market, contributing towards an oversupply of accommodation and making properties harder to rent “it is getting more and more difficult to let properties…up to about 4 or 5 years ago we would have all our properties, everything would be let by the Christmas break virtually for the following academic

year…its all changed now, come January or February we've still got about 20 properties still to let" (Letting Agent/Landlord 1)
There is evidence that two of the main sources of demand for PSBA are first year students and international students.

International Students

PBSA providers seemed to be in agreement that international students are attracted to purpose built accommodation and demand from international students has increased; "…the internationals have increased. Going back to the international market, that's massively increased" (PBSA Provider 2). One view is that international students don't have the luxury of being able to view property in person and so choose their accommodation on the internet based upon the name of a well known provider, and the number of facilities that the development offers, "…I think a lot of that is because the foreign students are not here in Sheffield. All they can see is what he sees on the internet" (PBSA Provider 3, 2011.) Shah (2010) highlights the demand from international students to be much higher than that of home students, adding that this is influenced by their parents who want assurance that offspring will be taken care of whilst studying in a foreign country.
The corollary is reduced international demand for traditional shared student houses. Letting Agent/Landlord 1 comments, "We have very few (international students) these days…you know even in the past before a lot of the purpose built stuff went up you know, we would have a small number of houses that would contain foreign students…but since the purpose built student accommodation went up, we've had very very few, very few. It might be the odd one in a group of UK students … but we've never had a house that contained a full group of foreign students" Letting Agent/Landlord 3 also supports this trend in the market "We have some good ones (international students) but nothing like the percentage that's at both Universities…if it were 20 percent overseas, we would be less than 5 percent so it doesn't reflect pro rata", whilst Letting Agent/Landlord 4 states "I would say at the moment 5 percent, that's all, it's a small amount."
For international students location is important as they gravitate towards the city centre attracted by the "city living, aspirational sort of lifestyle" (University Accommodation Office). International students will spend more money on location as well as the luxuries that these providers offer. In addition to Shah's (2010) reasons for international student choice, the fact that they are already spending a lot of money out on international fees, increasing the accommodation budget is not so significant. Furthermore, lack of knowledge of the student accommodation market mainly located in the traditional student residential areas make the city centre a convenient option. With PBSA they have the facility of being able to view their room and book it over the internet, with one large private provider even enabling the student to view their potential roommates online before they book.
There is a view that Sheffield Universities will look towards attracting more international students if the number of students applying to the universities from the UK, drops as a result of the introduction of higher fees for UK students. A representative from one PBSA provider in Sheffield comments, "Big market for internationals…I can tell you now that the Universities are now looking at more international bookings, because the internationals obviously pay upfront a lot of the time for their studies, you might get more margin/profit from them…but you'll find the international market will now become essential" International students coming to the Universities to take part in a summer course, have also played an important role with PBSA providers in occupying some of the voids that appear in their developments out of the core student period.

Demand Preferences

For UK students the main attraction of PBSA appears to be ease of obtaining accommodation, without having to search the local housing market for vacancies. However the quality of accommodation found in PBSA does appear play a decisive role in the choice of PBSA rather than the private student housing market, ranking just short of first place in the survey. Woolcock (2010) draws upon this distinct quality of PBSA not usually available in the traditional student housing market, "More students in University Accommodation now have ensuite bathrooms and attractive communal living areas…For those choosing to live with friends in a house rented from a private landlord, however, accommodation is as varied as it ever was". By contrast students who expressed a preference for traditional accommodation the most popular reason for not moving into PBSA quoted by students responding to the questionnaire was the risk of having to share with younger students.

Paradoxically the preference of first year students for PBSA does seem to have reinforced the trend for returning students to gravitate towards traditional accommodation. This is conformed in the interviews conducted with letting agents/landlords. Landlords and letting agents commented upon first year students, who having lived in PBSA upon arrival in Sheffield, find the restrictions imposed motivates them to move away from such accommodation in their second year of study "what we are finding is when we do speak to students, that they don't like the environment that they live in because it is a little bit controlled and a little bit like big brother, they're being watched over all the time, they're being penalised for every last little mark and scratch that they make on the walls" (Letting Agent/Landlord 1). Another interviewee agrees "…they want to leave the confines of the regimentation of a halls of residence where the very large ones have got security guards and all the rest, and they do tend to find that that's a little bit clinical, so they want to get out and get their own house where they've got their own living room, with their own garden with their own space for a barbeque etcetera etcetera and feel it's their home." (Letting Agent/Landlord 2). It appears that for first years, PBSA is ideal for meeting other like minded students who they can then move into a shared house or flat. Thus the "rite of passage" remains amongst many students in Sheffield and many representatives from the private student housing sector imply that they don't feel that this trend is going to change in the near future. "I would say they find their feet, they find their friends and they want a back door in the garden in my experience" (Letting Agent/Landlord 2). Another letting agent/landlord agrees "What tends to happen and you can only generalise because you're gonna get some kids who will want to go back into a hall, and we've had the odd one, but under normal circumstances – this is again a sweeping generalisation, the halls of residence get filled with first year students from all over the country…generally if there's 5 or 6 of them together they'll then they'll go all together and look for a house to stay with together…"(Letting Agent/Landlord 4)

Effect upon the Quality of supply of student housing in Sheffield

Data from interviews with letting agents and landlords confirmed that the increase in PBSA in Sheffield has had an impact on the quality of traditional student accommodation this confirms what is generally known from the literature "now privately managed blocks offer en-suite rooms with double beds, flat screen TV's and free wireless broadband, as well as CCTV coverage around the building to appeal to security-conscious parents. Students get an electronic key, just as in a hotel" (Kollewe, 2010, p.21). But at the same time has had a detrimental effect on those landlords who have not kept property to a satisfactory standard of quality and repair. "The up side, particularly from the tenant point of view is that (PBSA) forced the private sector market (traditional student housing) to up its game in terms of providing better quality accommodation…and also it's forced out a lot, and particularly with the new legislation come in in the last few years, its forced out a lot of the smaller buy to let type landlords who will just buy a house here …and it may not be compliant with regulations….and it has also forced out some of the so called 'professional landlords' or indeed rogue landlords that have had substandard properties, they don't comply to regulation, you know.." (Letting Agent/Landlord 1). This appears to have increased expectations and landlords are less able to get away with sub-standard accommodation "…if I go into a house and see that it's not gonna let cos it's old fashioned furniture, it's flowered carpets, it's dog-eared tatty settees, I'll just say you either change it and come with me or you don't and thank you very much but get someone else". Kollewe (2010) reminds us of this former standard of student accommodation which society viewed as almost normal, that which students 'just accepted'. "Student halls of residence have come a long way since the days of the TV series The Young Ones." (Kollewe, 2010, p.21).

Price

As the quality of accommodation in the traditional student housing market has been improving, so has the price increased? Interviews suggest that PBSA has effectively been able to cap the amount which landlords feel they can charge "…with all the purpose built stuff that's gone up, you know it's been to the benefit of the student tenant as its kept rent rates at a fairly stable level over the past few years" (Letting Agent/Landlord 2). Yet, it has also made rent increases in the student housing market seem much more acceptable. "it's not all bad news, those landlords who are on the ball have found that they have a good product, attractive in the market to student and parent who expect contemporary existence and are used to paying a lot of money in the hall of residence (PBSA). It has allowed them some price discretion" (Letting Agent/Landlord 3)

Nevertheless, as properties are becoming increasingly difficult to let because of the increased competition in the market, landlords have become much more prudent in how much they charge and this is also influenced by a threshold which the Sheffield market appears to have set. "…the sort of ceiling appears to be in Sheffield for the private landlord is around the £70 mark, maybe £72 or pushing it up to £75, but you do find a lot of landlords even if they have refurbished a property and it's really high quality, they are very nervous about going over that threshold."(Letting Agent/Landlord 1) Accommodation within the traditional student housing sector is amongst the cheapest in the UK, "Students can save money by renting privately…the biggest savings were to be found in Sheffield and Birmingham". (O'Grady, 2011) This nervousness over rent increases can be seen reflected in the behaviour of rental values. It has been recognised that when increasing rents, landlords will tend to mirror the behaviour of other landlords as they don't want to be priced out of the market. "…they're (landlords) very savvy in looking at what one another's doing and you'll occasionally find they may not move for a couple of years and then they'll bump up all of a sudden and they'll all bump up together…they're very much a reactive type of business." (University Accommodation Office)

Utility bills are included in many PBSA tenancies however as Hubbard (2009) highlights PBSA providers who pass increasing utility bills onto their rents may deter students at a time when value for money is key (CBRE, 2011), as budgets will be tightened as a result of increasing tuition fees. This feature of PBSA has forced certain landlords either into adopting all inclusive rents or at least considering them in order to keep up with competition within the market as well as student demand. "it is something that every year we have this chat about it, whether we should do an all inclusive…to be honest when you've got a large number of houses like us, it does become a bit of an administrative nightmare" (Letting agent/Landlord 1) One letting agent/landlord has even adopted a range of different priced contracts, each one reflecting a range of different utilities included, "…they've got three options but the majority 99 percent of the time students go for the all inclusive" (Letting agent/Landlord 4).

Future Demand

Introduction of higher fees is clouding the future. Higher costs may force more students to study at home and may also encourage the "earn while you learn" culture of part time study. If there is a decrease in the number of first year students entering Universities in Sheffield and an increase in part time students, then this will clearly reduce demand.

Neither of the two Universities in Sheffield know exactly how the market is going to behave in the near future, although when interviewed, accommodation office representatives appeared confident that student intake will remain firm even when the increase in fees has been introduced "(my)personal view is at the moment…is that I think it's unlikely to have a major effect…simply because of the standard of the University…I'm not sure there's going to be a massive impact on the Russell Group Institutions if you like, the courses are there, the reputations there and I think students will realise that the money is there and the whole student loan payback isn't that scary". But even the post 1992 University commented "they're looking at figures between 10 and 30 percent reduction in student numbers but we all know that there are at least that many waiting to backfill anyway at this moment in time".

This may of course be wishful thinking and most commentators acknowledge one trend that might appear over the next few years is an increase in the number of students living at home, either on a part time or full time course, in order to save money and cut down on living costs whilst at University. LV= (2011) research predicts that 52% of all younger students will choose a local higher education establishment and stay at home to live with their parents, leaving university cities as 'ghost towns' by 2020. However 52% represents the highest decline in Newcastle upon Tyne with Sheffield being ranked 3rd highest with a predicted decline in the local student population of 42%. Nevertheless these findings are questionable being based on a survey of about 1,000 students and parents (LV=, 2011, p.3). The issue is much more complex. "everyone's very much in this bubble now whereby next year, they don't actually know what's going to happen…are the numbers going to dwindle, are students going to want more value for money, absolutely they always do anyway, are they going to want it all inclusive?..." (PBSA Provider 2, 2011)

Wider Policy Issues

One of the aims of introducing PBSA development into Sheffield was to reduce student numbers within areas of already high student population, a result of limited University accommodation in the city which caused an overflow of first year students living in shared housing. "…Universities maintained a certain amount of traditional hall type accommodation …and then everybody else had to go into the private rented market and what was increasingly happening was the conversion of family houses into student lets" (Sheffield City Council, 2011). Morgan and McDowell (1979) highlight the emergence of this nationwide problem as far back as the early 1980's.

The increased availability of traditional housing for returning students has in some instances enabled housing to be released back into the local community, contributing to a much more balanced neighbourhoods (Smith, 2008). All these consequences have contributed an indirect effect upon the spatial distribution of student properties in Sheffield. "As a new block has been built, what you tend to find is the older style poorer quality pieces of accommodation have gone by the wayside and so we've tended to sell them. So what you'll find is, areas of Sheffield that were highly studentified if you like, have become more residential than a student area. For example Meersbrook, Nether Edge, Walkley, certain areas of Crookes, Abbeydale Road, Highfields, are all slowly turning back into residential areas." (Letting Agent/Landlord 4, 2011) This therefore has resulted in a higher concentration of student properties closer to the city centre where the supply of better quality accommodation tends now to be situated (closer towards the Universities) in order to meet the demands of the students (Letting Agent/Landlord 3).

As part of the planning agreement to build a new student village in the grounds of one of the two universities in the city the University was required to release some of their own housing stock back into the market with restrictive covenants detailing that the property could not be used in the future as an HMOs (House in Multiple Occupancy). One important planning requirement that will be coming into effect in Sheffield in the near future is a condition known as Article 4 which has been created with the aim of controlling the increasing number of student houses in multiple occupation (HMOs) in an already saturated student area. It will therefore require that dwelling houses (use order class C3) require planning permission in order to be converted into an HMO (use order class C4) in order to house 3-6 unrelated people, in areas already saturated with properties that satisfy the same use. Whether planning permission will be granted or not will depend on whether the requirements in the policy 'Creating Mixed Communities' (CS41) are met (Sheffield City Council). This policy sets out to limit shared housing (including purpose built student accommodation and larger HMOs for 7 or more people) and will not grant planning permission where more than 20% of residences within 200 metres of the application site are also shared housing.

It was ascertained during an interview with a representative from Sheffield City Council City Development Division (2011) "we've encouraged student accommodation where there hasn't been a predominance of it but we've tried to cap it at sort of about 30% of the total stock (housing stock of any particular area) and then to encourage further provision to move on to other areas". The interviewee then follows that this has been to reduce ghettoised areas of student accommodation development which may be found in other cities.

CONCLUSIONS

Purpose built student accommodation has increased the standards of accommodation in the housing sector to such an extent that sub standard properties in Sheffield are becoming unlettable and the landlords of these properties are consequently being forced out of the student housing market. The increase in PBSA supply had undoubtedly improved the quality of student housing and it has also increased rents. At the same time PBSA rents are effectively placing a cap on the amount private landlords can charge in the marketplace.

The increase in PBSA supply has allowed both Sheffield Universities to offer improved accommodation and expand student numbers without placing increased pressure on the local housing market because the perimeter boundaries of student accommodation areas in Sheffield have shrunk back as former student properties are released back into the local housing stock, reducing the extent of studentification in a number of areas of the city. It is also the case though that PBSA has saturated the student accommodation market, making it harder for landlords within the private student housing market to survive as demand for their properties has been reduced.

Sheffield had the benefit of large scale PBSA development before the financial crises struck. The current period of economic uncertainty appears to have contributed to the slowdown of PBSA development in the city. Nevertheless the data do suggest that there may still be potential for more PBSA development, albeit concentrated in much smaller scale developments than those which took place in 2006/07. With just under 18,000 known purpose built student beds and a student intake of about 13,000 students in 2010, there appears to be a sufficient supply of PBSA for first year students in Sheffield, with the excess supply being met by either by post-graduate students or returning undergraduates wishing to remain in or go back into PBSA. The main source of demand for PBSA in Sheffield remains first year students as older students prefer not to live with younger students and are put off by high cost, and lack of independence. Yet, PBSA appears increasingly popular with international students.

The future is uncertain because of the wider impact of increased tuition fees in 2012. There may well be an increase in the number of first year students living at home although this might be balanced by an increase in international students. But whatever the future may hold for the housing market, it is clear that landlords will have to continue to increase standards and remain flexible within the market place. This will ensure that they meet the demands of the students, whatever their demographic. Rising utility costs for example are leading to the appearance of all inclusive rents from private landlords as a popular choice amongst students. Landlords need seriously to consider all possible methods through which they can increase the demand for their properties, in order to set themselves apart in a market that is becoming increasingly dominated by purpose built student accommodation. Furthermore, potential developers must ensure a close relationship with both Universities in the city and obtain projected intake figures for the coming years. If Universities cap student numbers in a market where there is already limited demand for PBSA, then development wouldn't be a sensible option.

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IS THERE POSSIBILITY OF HARMONISATION: A COMPARISON OF UK AND GERMAN INVESTMENT VALUATION PRACTICE

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ABSTRACT

Over the last few decades, the number of cross-border real estate investments has increased significantly and as a result of nationally differing valuation standards and methods, discussions about the lack of comparability occur more often than ever before. The initial efforts and successes of the harmonisation of valuation standards are already noticeable; however, there is still some way to go before international practice can be considered uniform, particularly in terms of investment valuation methodology. The purpose of this paper is to report on a small interview based study comparing the national investment valuation practices of the UK and Germany and examining the possibility of further harmonisation of investment valuation practice. The findings of the study show that none of the investigated investment valuation practices can be considered superior or inferior as both suffer from certain weaknesses which primarily emanate fromthe lack of transparency which exists in the real estate market. The research concludes that further moves towards the harmonisation of valuation practice are both desirable and likely, in particular the regularisation of standards. However, the research indicates that the harmonisation of investment valuation methods is very unlikely to happen in the future as the dynamics of each international market are and will always be different and therefore require individually suitable valuation methods which are able to reflect these characteristics.

Key Words - Valuation; Investment Method; Valuation Standards; Harmonisation

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Glossary

Ertragswertverfahren
The Ertragswertverfahren is used to determine the market value of investment properties by capitalising the net investment incomes which are likely to be generated. In the Ertragswertverfahren land and building are considered as two separate entities.

Liegenschaftszinssatz
The Liegenschaftszinssatz is the yield applied to capitalise income in the Ertragswertverfahren (German income approach). It is determined on the basis of appropriate purchase prices and net profits of similar constructed and used properties taking account of the remaining life expectancy of the buildings.

INTRODUCTION

Increasing globalisation of the world economy affects real estate business and real estate valuations. Consequently, it is in investors' interests that property valuation is carried out consistently and transparently (Eriksson et al. 2005, p.47). Since the 1990s, as a result of increased cross-border investments, discussion about comparability between international real estate investments has increased momentum in the demand for harmonisation of valuation standards in Europe (McParland et al. 2002, p.138). This process can be traced back to the 1970s when TEGoVOFA (The European Group of Valuers of Fixed Assets), was founded in 1977. Under the leadership of the RICS (Royal Institution of Chartered Surveyors), TEGoVOFA published the Guide Bleu (known in the UK as the Blue Book). In the Guide Bleu, European valuation standards were formulated for the very first time (Gondring and Lammel 2001, p. 574). The existing diversity of real estate standards results from differing national professional structures, institutional regulation and differences in methodology and definitions (Mansfield and Lorenz 2004, p.295).

Increasingly, the conventional German standards are already partly complemented, amended or even replaced completely through general international regulations. As a result of cross-border transactions of real estate investments, international and, in particular, English valuation methods continually take root in German valuation practice. However, the debate surrounding the harmonisation of European investment valuation standards continues. Increased criticism of German valuation practice arose during the recent financial crisis and the resulting devaluations of real estate assets worldwide. This affected German investments but it was noticeable that portfolios located in Germany, and which were valued by German valuation companies showed relatively small minor devaluations compared to portfolios owned by British investors, who had their portfolios in Germany valued by internationally active valuation companies located in the UK (Borutta 2010, p.12). With these events in mind it is clearly of relevance to investigate whether valuation practice in the two countries is comparable.

In the following sections, the fundamentals of UK and German valuation methodology are outlined. In order to give an overview of the different methodologies, the different valuation regulations in each country are first considered. As international investors mainly compare the returns of their property investments by using the investment approach, the focus in this study is primarily on the traditional and modern UK investment methods and on the German counterpart called the 'Ertragswertverfahren'.

VALUATION PRACTICE IN THE UK

In the UK, statutory regulations do not exist regarding the valuation of property and it is the professional organisations and bodies that develop and implement valuation regulations in practice. The Red Book encompasses a huge number of valuation rules and is published by the RICS, the most significant regulatory body in the UK. Although the Red Book does not have any statutory power, it provides obligatory guidance to assist the preparation of valuation reports (Mansfield and Lorenz 2004, p.294).
The RICS does not regulate the valuation method to be used. Members are committed to abide by the regulations and confirm in valuation reports that the valuation has been carried out in accordance with

the Red Book (Thomas 1995a, p.36). Normally the model applied to assess the market value of income generating investments is the investment method. This however can be considered something of a misnomer as it is often applied more like a comparison technique, where the yield is used as the comparison component (Adair et al. 1996, p.278). Where a genuine investment approach is taken however one of two approaches can be taken: the conventional growth implicit approach and the modern growth explicit approach. Growth implicit models do not make explicit forecasts of expected increases in rental value. Put simply, the present attainable net income is assumed to be constant and is capitalised and valuer's expectations of rental growth are implicitly taken into account in the discount factor, the All Risks Yield (ARY). The determination of the investment value within the framework of growth explicit valuation models is made on the basis of so called DCF (Discounted Cash Flow) analyses. Growth explicit methods differ from traditional methods in using more differentiated assumptions including explicit consideration of rental growth to find both a NPV (Net Present Value) and an IRR (Internal Rate of Return) (Thomas 1995b, p.82ff.).

Critiques of UK valuation practice mainly refer to the simplified and unrealistic assumptions regarding the level of income flows and the choice of yields (Thomas 1995b, p.86ff.):

1. The assumption of consistent rental growth when valuing investments does not always reflect market conditions.
2. The calculation of the yield by the valuer is often incomprehensible to investors, with the consequence that real estate investments are not comparable with alternative investments.
3. The calculation of the growth rate from the difference between the investor's required rate of return and the ARY is debatable because the true growth rate of the property is not analysed.

VALUATION PRACTICE IN GERMANY

In Germany by contrast there is statutory valuation legislation and regulations and sworn valuers are legally required to use national standards. These are mainly set down in the WertV (Wertermittlungsverordnung) and the BauGB (Baugesetzbuch) (McParland et al. 2002, p.137). The WertV is a prescriptive document which inter alia addresses valuation methodology. This is supported by the WertR, a set of guidance that provides an interpretation of the WertV and supplementary commentary on the style of valuation reports and is in some ways similar to the Red Book (Mansfield and Lorenz 2004, p.296). Sections 192 to 199 of the BauGB cover the definition of market value and the duties of valuers (Gondring and Lammel 2001, p. 528).

Section 7 of the WertV sets out three different methods of valuation: The Vergleichswertverfahren (capital comparison method), the Sachwertverfahren (depreciated replacement cost method) and the Ertragswertverfahren (investment income method). These three methods are roughly equivalent to the UK valuation methods; however, they differ fundamentally in their application (Adair 1996, p.138). Initially, the Ertragswertverfahren was confined for valuing let residential property and mainly owner-occupied commercial property which was comparatively illiquid. However, since the 1990s, with an increase in the role of commercial property as an investment, the Ertragswertverfahren is more often applied for valuations (Adair et al. 1996, p.138). In contrast to the UK, there are fewer different kinds of yield used in Germany. The yield applied 'Liegenschaftszinssatz'. Figure 1 illustrates the procedure of the Ertragswertverfahren in accordance to section 15-20 WertV.

Criticism of German valuation methodology can be summarised as follows:

1. The precise determination of the remaining life expectancy of a building is debatable.
2. Rents are not analysed accurately or the current rental value of a property is often wrongly assessed or even totally ignored.
3. The expected Liegenschaftszinssatz is repeatedly determined wrongly. Most times, this results from insufficient information on comparable transactions.
4. Some German valuers are not familiar with investment theory and, in particular, are not able to work with discounting and compounding calculations.

(Morgan and Harrop 1991, p.128f.)

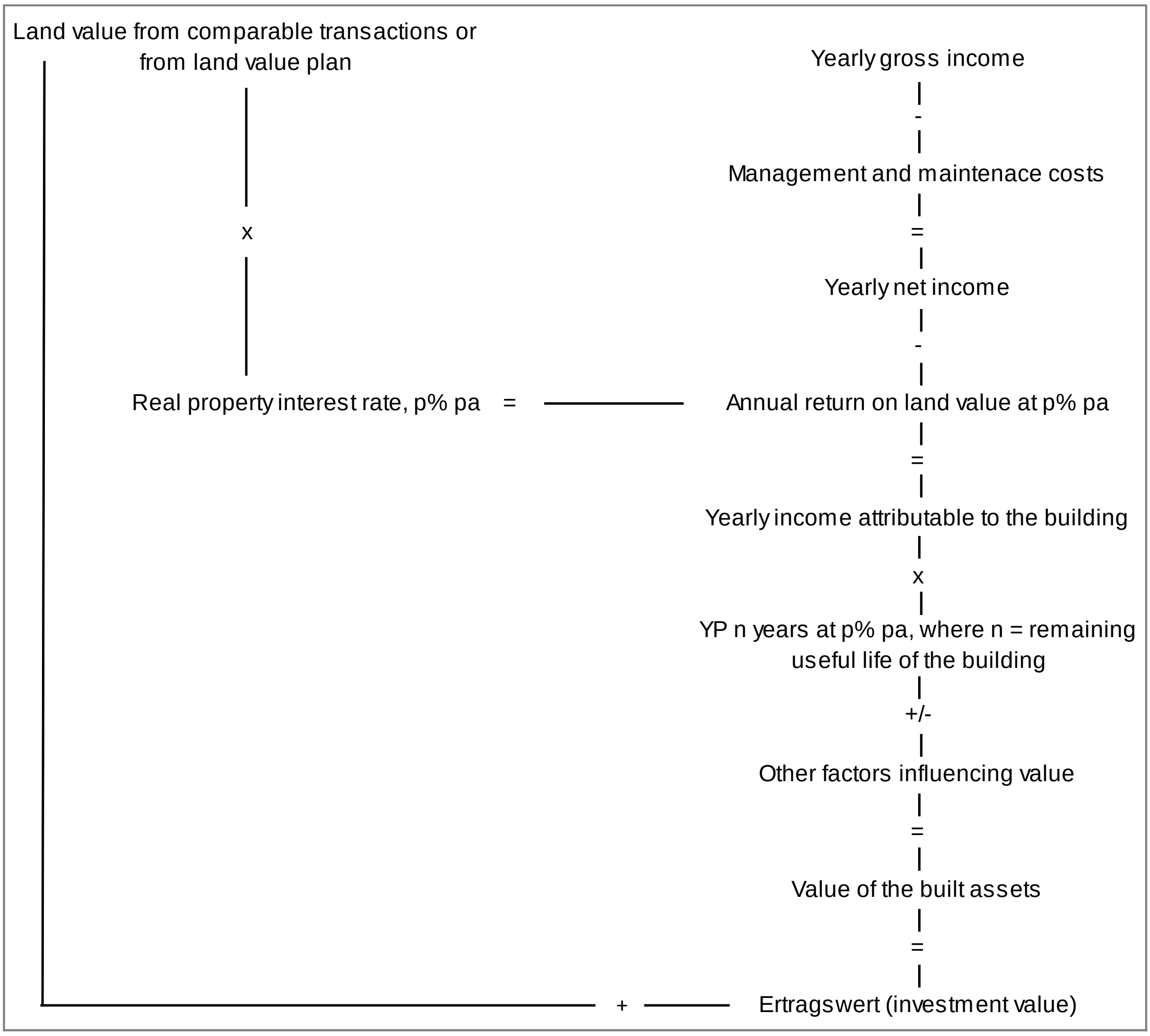

Figure 1: Ertragswertverfahren (Adair et al. 1996, p.140)

Professional Qualification of Valuers

In the UK there are a number of professional bodies concerned with property valuation, the most significant being the RICS which has a high degree of control over professional education, practice and entry into the profession. The ‘chartered surveyor’ designation is seen as a necessary professional qualification for carrying out valuations. This normally involves: holding a university degree, accredited by the RICS, having sufficient work experience and completion of the APC (Assessment of Professional Competence) (Morgan 1997, p.191ff.).

By contrast anyone can become a property valuer in Germany. The profession is traditionally dominated by land surveyors, building engineers and architects experienced in valuation methodology (Mansfield and Lorenz 2004, p.294f.). Although there are professional associations for valuers, none hold such high status as the RICS. One of the highest German professional statuses is that of the ‘sworn valuer’. To be registered as a sworn valuer at the Industrie- und Handelskammer (Chamber of Industry and Commerce), valuers have to demonstrate sufficient theoretical and practical knowledge and, additionally, have at least five years practical experience in the valuation sector with an adequate university degree, or ten years if they do not have an academic qualification (Morgan 1997, p.196). The number of RICS accredited university degrees in Germany has recently increased and further universities are currently working towards RICS accreditation.

As clients' needs have become more ambitious in respect of valuations for international investments, German valuation organisations have recognised the demand for a more uniform valuation profession; especially on the lines of RICS (Mansfield and Lorenz 2004, p.295). This internationalisation and professionalisation in Germany is the necessary consequence of the investors' increased expectations that they have when considering real estate investments in comparison to other asset classes (Borutta 2010, p.14).

Definition of Market Value and Verkehrswert

In Germany there is only one legal definition of market value (Verkehrswert), by contrast different terms of 'value' (existing use value, depreciated replacement costs) are defined in the Red Book. Until recently, the RICS defined the open market value of a property as the *best* price that could be expected to be obtained in the open market whereas the Verkehrswert is conceptualised as the *average* price that could be offered by the average bidder in the market 'in normal business dealings' (Adair 1996, p.136f.). Valuations based on open market value therefore tended to result in a higher outcome (Mansfield and Lorenz 2004, p.297). In 2002, the RICS replaced open market value with market value according to the wording of the IVSC (International Valuation Standards Council). Figure 2 shows the two definitions. The wording is different but the meaning is essentially the same and should therefore lead to the same outcome.

The RICS Red Book (2011) definition of market value	The German definition of Verkehrswert (§194 BauGB):2
"[...] the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeable, prudently and without compulsion."	"[...] the price at the time to which the assessment refers, would be attainable in normal business dealings, in accordance with the legal circumstances and actual characteristics, the particular state and situation of the property or other object for valuation, without regards to unusual or personal circumstances."

Figure 2 Definitions of Value

Investment Method and Ertragswertverfahren

Figure 3 provides an overview of the elements and practice of the traditional investment method as applied in the UK and the German Ertragswertverfahren.

In terms of areas of application, the UK investment method and the German Ertragswertverfahren broadly align. The differences are primarily in the methodological approach and are outlined in the following (Thomas 1995b, p.88f.):

- In the UK, the allowance for risk of rent loss is implicitly considered by the ARY or loss of rent period. Whereas in Germany, this is considered in the management and maintenance costs.
- In contrast to the Ertragswertverfahren, building and land are considered as one unit in the traditional investment method.
- In the UK, the net annual rent is capitalised in perpetuity, where the age of a building and its future obsolescence are implicitly considered in the ARY. In the German Ertragswertverfahren this is considered over the remaining life expectancy.
- The traditional investment method takes into account the additional expenses of acquisition.

[2] Translation based on Mansfield et al. 2004, p.297

Traditional UK Investment Method	German Ertragswertverfahren
Yearly gross income (sustainable achievable gross income)	Yearly gross income (contract rent / market rent)
Less management and maintenance costs (if not recoverable) Operating costs Maintenance costs Risk of rent loss	less management and maintenance costs (if not recoverable) Operating costs Maintenance costs
	Less annual return on land value (Land value x Liegenschaftszinssatz)
	= Net annual rent attributable to the building
= Net annual rent of the property	= Net annual rent of the property
Capitalisation of the net rent of the property in perpetuity on the basis of the ARY	Capitalisation of the net rent of the building - Over remaining life expectancy - On the basis of the Liegenschaftszinssatz
Increases or reductions taking account of other value affecting factors *Deferred repairs* *Existing contracts*	Increases or reductions taking account of other value affecting factors *Deferred repairs* *Special payments*
Less additional expenses of acquisition *Real estate tax* *Notary fee* *Agent's commission*	Plus Land Value
= **Investment value**	= **Investment value (Ertragswert)**
Area of application: Property which are mainly for the purpose of generating profit	Area of application: Property which are mainly for the purpose of generating profit

- Figure 3: Comparison of Investment Method and Ertragswertverfahren (Author's design based on Gondring and Lammel 2001, p.596)

All Risks Yield and Liegenschaftszinssatz

The ARY represents the discount rate applied to a property investment, implicitly taking account of all risks (Borutta 2010, p.13). The Liegenschaftszinssatz is equal to the average interest rate and is determined by a committee of experts based on purchase price data and includes future expectations of market participants making transactions within the investigation period. It takes account of the building's remaining life expectancy.

A common argument against the Liegenschaftszinssatz is that it is determined on past sales contracts and, therefore, cannot represent the current market. Many British valuers claim that the Liegenschaftszinssatz does not reflect sudden market fluctuations. However, it can be assumed that valuers who perform their job carefully consider sudden market fluctuations by reflecting this in the 'correction factor' and it is debatable whether British valuers consider so-called 'fire sales' when determining the ARY. This results usually in a higher range of the ARY (Borutta 2010, p.13).

Figures 4 and 5 outline the mathematical derivation of the ARY and the Liegenschaftszinssatz[3].

Fully Let Method:
CV = NR x YP

Solving the equation for YP:

$$YP = \frac{CV}{NR} = \frac{1}{p} \quad \text{or} \quad p = \frac{NR}{CV} = \frac{1}{YP}$$

When replacing CV by TP, the equation for derivative of the ARY is determined:

$$p = \frac{NR}{TP} = \frac{1}{YP}$$

Figure 4: Derivation of the ARY (Author's design based on Thomas 1995b, p.89f.)

There are two differing ways of derivation of the Liegenschaftszinssatz depending on the remaining life expectancy of the building:

Remaining life expectancy < 50 years	**Remaining life expectancy > 50 years[4]**
$CV = NR - LV \times \frac{p}{100} \times M + LV$ Rewriting the equation leads to: $CV = NR \times M + LV/p^n$	CV = NR x V Solving the equation for V: $V = \frac{CV}{NR} = \frac{1}{p} \quad \text{or} \quad p = \frac{NR}{CV} = \frac{1}{V}$ When replacing CV by TP, the equation for derivative of the Liegenschaftszinssatz in the case of a long remaining life expectancy is determined: $p = \frac{NR}{TP} = \frac{1}{V}$

Figure 5: Derivation of the Liegenschaftszinssatz (Author's design based on AGVGA-NRW 2006, p.4f.and Schulte 2000, p.405f.)

Both the ARY and the Liegenschaftszinssatz are determined on the basis of the net annual income and sales prices. Where a building has a low (that is < 50 years) remaining life expectancy, the Liegenschaftszinssatz is lower than the ARY. However, the Liegenschaftszinssatz for buildings with a high remaining life expectancy (that is > 50 years) equates to the ARY as the remaining life expectancy is not taken into account in this case (Thomas 1995b, p.89).

Harmonisation of Investment Valuation Methods

Despite the publication of valuation standards by professional bodies, progress on the harmonisation of valuation standards remains limited (McParland et al. 2002, p.140). Some success has been achieved with organisations such as TEGoVA, IVSC and EUROVAL (European Property Valuers Association) holding discussions about codes and methods definitions such as 'market value'. The RICS now include the IVSC definition in the Red Book and this first success seems to imply that discussion on harmonisation of valuation standards will continue (Adair et al. 1996, p.320).

[3] Where: CV=Capital Value; NR=Net Rent; p=Liegenschaftszinssatz/All Risks Yield; LV=Land Value; M=Multiplier; YP=Years Purchase; TP= Transaction Price

[4] When >50 years the land value can be disregarded

Eriksson et al. (2005, p.55ff.) investigated driving forces and barriers to harmonisation of valuation practice in Europe by undertaking a survey across four European countries: Germany, France, Holland and Sweden. Their findings were published in 2005 in the Journal of Real Estate.

Valuers participating in their survey considered professional bodies such as TEGoVA more as facilitators rather than catalysts of the harmonisation progress and the internationalisation of business and the increase in cross-border investments seem to be the strongest driving forces as international investors express a preference for standardised valuation practice. Another key driver highlighted by the research is the development of property performance indices such as the IPD (Investment Property Databank).

As for barriers one of the most obvious is language. Although most German valuers speak another language (usually English), they are often unwilling to undertake business in a language other than their mother tongue. Add to this differences in the interpretation of specific property terms, the differing qualifications of valuers, variations in legal and tax structures and their implications, it is clear that there are many barriers to the universal application of valuation standards.

METHODOLOGY

The aim of this study was to get a deep insight into individual perceptions of the quality of investment valuation practice in the UK and Germany and the need for and possibility of further harmonisation. Twelve practitioners working in valuation or investment in Frankfurt, London, Manchester Leeds and Sheffield were interviewed. There were four face-to-face interviews in each country and one further telephone interview in Germany. Two professionals from the UK answered questions in writing. Interviewees were asked to explain their role in the company as well as their professional experience. Interviews lasted between 25 and 80 minutes and were recorded and transcribed.

Interviewee	Field of Expertise	Country	City	Date	Duration	Interview Type
I1/I2	Investment/Valuation	England	Leeds	19.07.2011	52 min.	face-to-face
I3	Valuation	England	Leeds	19.07.2011	80 min.	face-to-face
I4	Valuation	England	Sheffield	20.07.2011	33 min.	face-to-face
I5	Investment	England	London	24.07.2011	34 min.	face-to-face
I6	Valuation	England	London	01.08.2011	-	in writing
I7	Valuation	England	Manchester	02.08.2011	-	in writing
I8	Valuation	Germany	Berlin	01.08.2011	27 min.	telephone
I9	Valuation	Germany	Frankfurt	02.08.2011	39 min.	face-to-face
I10	Valuation	Germany	Frankfurt	02.08.2011	22 min.	face-to-face
I11	Valuation	Germany	Frankfurt	03.08.2011	28 min.	face-to-face
I12	Valuation	Germany	Frankfurt	03.08.2011	42 min.	face-to-face

Figure 6: The interview sample

Data from the interviews was coded, drawing out a number of recurring themes. The coded data were collated under each of the themes which broadly correspond to respondents' views on the respective qualities of valuation methods in the UK and in Germany, critiques of practice in both countries, awareness of efforts to harmonise methods and success and desirability achieved of this endeavour.

DISCUSSION

Quality of UK and German Investment Valuation Methods

UK based professionals were agreed that the UK investment method is not perfect and does have certain weaknesses. When valuing investment properties valuers are using comparables, however, as the market is not perfectly transparent, especially in recent years when there has been a lack of transactions, there is insufficient information. This results in suitable comparable evidence being hard to find. Even if sufficient evidence can be found, precise details of comparable properties are absent so that analysis is based on the subjective view of the valuer. However UK based interviewees considered that in the absence of alternative approaches this remains the best method of assessing the value of an investment property. One interviewee did though suggest the investment method "is not […] generally sufficient when considering worth or investment returns against an investor's benchmark" (I7).

The German valuers interviewed similarly agreed that the nationally applied Ertragswertverfahren suffers from some weaknesses. The main points of criticism concern splitting the land and building and the determination of an adequate Liegenschaftszinssatz. Assessing the land value is a tricky part of the Ertragswertverfahren and this requires some experience and careful consideration and is often a matter of judgment. Similar problems appear in determining the Lienschaftszinssatz which is only published for Germany's 'big 10' cities and, in some cases only published every two years. This means that they can be out of date and therefore not always reliable comparable evidence.

However, all German participants considered the Ertragswertverfahren to be an appropriate method for assessing an investment property's value in principal. One even suggested in cases where the property has a relatively short life expectancy and, as a result, a lower earning capacity, using the Ertragswertverfahren is better than using the UK investment method. (I11) This is because in the UK investment method a shorter remaining life expectancy is merely taken into account by increasing the yield reducing the property's market value, unlike the Ertragswertverfahren which takes explicit consideration of the remaining life expectancy of a building. I12 suggested this method is not the most suitable for valuing investment properties and expressed preference for using Discounted Cash Flow (DCF) when valuing multi-tenant commercial properties to better reflect payment flows.

Specific criticisms leveled against the valuation methods in both countries were explored in the interviews and a summary of these is set out in Figure 7.

UK Practice	**German Practice**
The assumption of consistent rental growth when valuing investments does not always reflect market conditions:	*The precise determination of the remaining life expectancy of a building is debatable:*
The calculation of the yield by the valuer is often incomprehensible to investors, with the consequence that real estate investments are - with the interest as the decision criteria - not comparable with alternative investments:	*Rents are often not analysed accurately or the current rental value of a property is often wrongly assessed or even totally ignored:*
The calculation of the growth rate from the difference between the investor's required rate of return and the ARY is debatable because the true growth rate of the property is not analysed:	*The expected Liegenschaftszinssatz is repeatedly determined wrongly. Most times, this results from insufficient information on comparable transactions:*
	Some German valuers are not familiar enough with the investment theory and, in particular, are not able to work with discounting and compounding calculation[5]

Figure 7: Summary of Criticisms

[5] The accusation that some Germans are not familiar enough with discounting and compounding is only partly justifiable. Valuers whose day-to-day work is to value property are all familiar with investment theory. Therefore, this point of criticism should probably be more directed at unqualified valuers such as architects and building engineers. The majority of valuers working for big valuation companies are tested on their knowledge of discounting and compounding before they become certified valuers.

Awareness of Harmonisation

German participants were familiar with TEGoVA, but only two of the English valuers participating had heard of the organisation, possibly because UK valuers feel very committed to RICS standards and do not really see any reason to refer to other professional bodies.

Furthermore whilst valuers in Germany were and still are regularly confronted with changes in standards and methodology moving towards harmonisation in a global context, English valuers seem to have little knowledge of this. There has been progress towards harmonisation especially by the RICS, who have clarified the purpose of the valuation report, defined the valuation basis and provided guidance on clients care. In addition, I7 stated that he even experienced a greater understanding of differing valuation standards by investors. However, harmonisation efforts have been limited to standards and, additionally, only aimed to harmonise valuation practice within the UK so that global harmonisation had not been experienced by any of the English interviewees. In Germany, first adjustments to international standards were made by harmonising the definition of market value in 2002 and the replacement of the 'sustainable rent' by the 'market standard rent' in 2010. In 2004, German valuers were confronted with harmonisation when foreign investors, especially the British, started investing in German properties. Since then, big valuation companies in Germany increasingly value to RICS standards and also use UK investment valuation methods.

Apart from the traditional UK investment methods, the use of the DCF method has gained significant importance for international business and is becoming increasingly demanded by investment banks. Thus, in Germany the harmonisation of standards and methods has taken place to some extent. German banks still prefer the Ertragswertverfahren, but this method is increasingly receding into the background; particularly in big valuation companies.

Interviewees from both countries were unanimous in their view that with the increase in cross-border investments, valuers and investors would only benefit from further harmonisation. I3 commented that it would be good to understand all the international principles utilised in a valuation and the way the value of an investment property was assessed. I10 considered that the specifics of German valuation standards and methods are the reason why some investors do not enter the German market as they do not understand German valuation practice and he, therefore, does not see any reason why German valuers have to keep valuing investment properties using their national valuation methods. Another specific point mentioned in the interviews was the cross-national lack of yield comparability.

The main barrier to harmonisation does appear to be resistance to change. This is especially so where change results in additional work or higher costs. Of all the interviews only I3 thought that real estate professionals would be receptive to change. Valuers in both countries believe in the strength of their system. For example German valuers believe that the Liegenschaftszinssatz better reflects the market than other yield determinations and, furthermore, that it makes sense to split the land and building when assessing investment value. The British also believe in the strength of their valuation practice and see themselves, as the more mature market. In Germany, there are public appointed and sworn experts who are exclusively permitted to value open-ended funds. This is a safe source of income for them as limited companies in Germany were not allowed to value open-ended funds. Complete harmonisation might place this source of income in jeopardy if all valuers were permitted to value open-ended funds. By contrast I11 stated that valuers would be willing to change their methods if they can understand the rationale for change and I9 thought they would change if they could earn more money by valuing differently. If there are be any more moves towards harmonisation of standards or methods, it was felt these will come through professional bodies as well as through the market itself and the people who are making investment decisions rather than by legislation.

CONCLUSION

Both British and German valuers see weaknesses in their national investment valuation methods but saw this not so much as low quality of the methods more lack of transparency in the real estate market which can sometimes lead to false values. There are some German valuers who prefer DCF methods to the Ertragswertverfahren when valuing investment property. British valuers seemed ready to accept criticisms but do not see a better way of valuing as these problems result from the market itself and not from the methods themselves. Equally German respondents accept the critiques of valuation practice have some substance; however this is seen as lack of valuer competence and not the weakness of the system. In other words the Ertragswertverfahren leads to a right value if it is applied correctly by the right person.

It was found that German valuers are confronted with the topic of harmonisation much more than the British are; especially in terms of valuation standards. In many of the big valuation companies investment property is already valued to RICS standards and UK methods. Both UK and German valuers consider the harmonisation of standards as being necessary, whereas standardised methods are considered as not being that important by the valuers. Thus, valuers participating in the study can see further moves towards the harmonisation of standards but only little change in the methods used.

There are differences in valuation regulations between the UK and Germany. Another distinctive difference between the two systems is the professional education of the valuers. The research findings have shown that neither the UK investment method nor the German Ertragswertverfahren is perfect as they both suffer from certain weaknesses and it would be wrong to claim either method is superior and should therefore replace the other. Most of the points of criticism were considered as partly true but were largely as a result of insufficient market information or the inadequate qualification of the valuers.

The research has shown that UK valuers have not been confronted with international harmonisation efforts so far, neither in terms of standards nor methods. In contrast to this, it can be seen that the RICS standards are already quite established in Germany and that the UK investment method has become significantly more important within the German market in recent years. This does not only result from the fact that the headquarters of the companies using UK methods and valuing in accordance to RICS standards are located in the UK but also from the fact that this is the way that international investors often require German valuers to value their investment property. It is assumed that any further moves towards harmonisation of standards or methods will also be result of investors' requirements rather than legislative changes.

Property as an asset class is already subject to many limitations, such as illiquidity, coarseness of the market, indivisibility of the unit, by comparison with other investment vehicles. The analysis of the data gained in the interviews has shown that regularisation of valuation standards and methodology can only assist the operation of the market and aid investors through better understanding and increased confidence in the advice given. Regularisation of valuation standards has already taken place in the last decades and further moves towards harmonisation are likely. However, this is not expected for investment valuation methods. Indeed, an increase in the application of traditional and modern UK investment methods in large international valuation companies in Germany as well as an increase in the use of the DCF method can already be seen. However, despite the increasing number of cross-border transactions, Europe-wide and globally, it appears that differences in the methodological approach will continue to exist in the future; even in the long term. This is mainly as a result of the different dynamics of the individual property markets and the unreceptive nature of people to change.

This is a small and limited study and so care must be taken over the extent to which these findings can be generalised. It is evident though that the whole question of harmonisation of methods and standards is complex. A more comprehensive study could be conducted investigating the opinions of valuers working at national valuation companies to build a more detailed picture of the differences based on a bigger sample of valuers, companies and regions.

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UPWARD ONLY RENT REVIEWS VERSUS INDEXATION: AN INVESTIGATION INTO THE IMPACT OF DIFFERING MECHANISMS UPON MARKET EFFICIENCY WITHIN THE COMMERCIAL REAL ESTATE SECTOR.

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ABSTRACT

The purpose of this study was to investigate whether the traditional, upward-only rent review clauses in English commercial leases can be replaced by rent indexation. Analysis of the existing literature found widespread criticism of upward-only rent reviews. Most importantly, they represent a disadvantage for tenants and an advantage for landlords. Contrary to this, analysis of the qualitative data, gathered through semi-structured interviews with professionals, showed that property market forces have shifted. This leaves tenants in a stronger negotiation position. A clear trend towards shorter leases and break options as opposed to rent review mechanisms. The evidence within the study suggests that the Codes of Leasing Practice have not had a significant impact on the flexibility of commercial leases. The findings of the study indicate that the Government should not legislate against upward-only rent reviews as this could have major negative impacts on the property market. Indexation was found to be a fair and reasonable option for both landlords and tenants. However, the exclusive use of indexation in commercial leases would lead to a distortion of the property market as the determination of market rents and values would be impossible.

The principal conclusion of this dissertation was that the self-adjustment of the market, which led to a higher flexibility in commercial leases, made a restriction of upward-only rent reviews unnecessary. Moreover, rent indexation is a well-established rent review mechanism in England – a tool whereby both parties can benefit. An exclusive use of indexation in commercial leases though seems most unlikely.

Key Words: Upward-only Rent Reviews, Rent Indexation, Rent Review Mechanisms, Voluntary Codes of Practice

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INTRODUCTION

There has been an ongoing discussion about rent reviews in England ever since they became a standard clause within commercial leases in the late 1960s. In order to maintain a rent which reflects the economic situation, many commercial leases contain a clause stating that the rent will be reviewed in certain periods (commonly every five years) and adjusted to the open market rental value. The "upward-only" part of these clauses has proved to be particularly problematic. In times of economic recession many business tenants have found themselves tied to long leases with upward-only rent review (UORR) clauses. The rents in these leases are, in the majority of cases, higher than the open market rent and therefore often lead to tenants being unable to pay their rent. Consequently, tenants (especially small businesses) claim that the use of these clauses is unreasonable. Landlords, on the other hand, wish to maintain the secure income flows. They advance the view that a ban of UORRs will lead to a decrease in investment and lending activity as (overseas) investors will not regard UK investments as secure and reliable anymore. With UORRs, investors have a secure income stream for at least five years and can calculate with not less than that income for the remainder of the lease term. This is one of the factors that make UK commercial property an interesting and potentially lucrative investment opportunity.

At the time of writing, the Government has not established legislation on the management of commercial leases in the UK. However, several Codes for leasing business premises have been introduced over the previous 20 years in order to give a guideline for commercial leases (for both landlords and tenants) and to get a picture of the industry's opinion of UORRs. As an alternative to the voluntary Codes, the Government could legislate against UORR clauses in commercial leases. However, this might either lead to higher initial rents (an uplift of between 5% and 16% should be applied according to Ward et al. (1998)) as landlords and investors aim to maintain the value of the property / investment, or even to more leases being contracted out of the 1954 Landlord and Tenant Act to preserve the upward-only clauses at lease renewal.

At the start of 2010, the Irish Government banned UORRs for commercial leases in Ireland. Analysis of newspaper articles shows the multiple effects this prohibition had on the Irish property market and the economy in general. In Ireland, UORRs were banned for leases coming into effect after the 28th of February 2010. This created a two-tier market as leases which came into effect before that date (and contained an upwards only rent review clause) significantly gained value for investors. Therefore, it is not only important to discuss the question of whether upward-only clauses should be abolished, but also how they should be banned and what consequences a legislative intervention could have.

In Germany, many commercial rents are subject to the adjustment to an index (so-called "index-linked rents / rent indexation"). Lease clauses provide for the rents to be adjusted in regular intervals according to a certain index. In most cases, this index is the either the RPI (Retail Price Index) or the CPI (Consumer Price Index). However, as commercial leases in Germany are not subject to many statutory provisions, any index can be agreed between landlord and tenant. This leads to the question of whether a property index could be used to adjust commercial rents according to the overall movement of the property market, rather than a measure of inflation. It seems likely that adjusting the rents to a property index leads to a more precise reflection of the market activity. Having been established for more than 30 years, and with a market coverage of 55% the IPD (Investment Property Databank) property index in the UK is far better established and more sophisticated than its German counterpart. This was established 16 years ago and only enjoys a market coverage of 17% (IPD 2011, pp29 and 45).

LITERATURE REVIEW

In their research relating to the changing patterns of commercial leases, Hamilton et al. (2006) outline some of the advantages of upward-only lease clauses. Not only is the income stream between reviews comparable to a conventional bond, that is fixed in nominal terms and therefore prone to inflation (p34), but also are the returns linked to levels of economic activity. Consequently, property assets have equity features without the risk of a fall in nominal income (p34). In their research about the impacts of UORRs on commercial property lending, Maxted and Porter (2003) outline further that the long term positive cash flow (due to average lease lengths of around ten years) leads to high levels of debt provisions from banks as these leases are considered to be very secure (p1).

In 2004, the Office of the Deputy Prime Minister (ODPM) issued a paper which discussed different options for deterring or outlawing the use of upward-only rent review clauses. It was stressed that a decisive advantage of UORRs is that they sustain capital values and hence investment in property (p5). This is due to the fact that UORRs provide a guarantee for the rent not to fall at any time over the term of the lease.

In the summary of responses to the ODPM Consultation Paper on Upward Only Rent Review Clauses in Commercial Leases (2005), it is stated that UORRs are a key feature of property income security as they reduce uncertainty for investors, developers and landlords and are therefore *"underpinning the attractions of property as a long-term investment class"* (p6).

However, tenants seem to be disadvantaged by these clauses. According to the OPDM, tenants are at a competitive cost disadvantage, especially in a falling market, as an UORR clause maintains the rent at the existing levels, whereas new entrants to the market are paying less rent (ODPM 2004, p4). In an extreme case, the *"rigid application of UORRs in a falling market can put the tenant out of business"* (ODPM 2004, p5). Retail tenants in particular face these disadvantages as their turnover is likely to decrease in a recession with the rent maintaining its level. Furthermore, it is outlined in the summary of responses to the OPDM (2005, p4) that UORRs not only produce higher costs in a low inflation environment, and therefore give rise to inflationary pressure, but also inflate property prices and consequently distort investment choice.

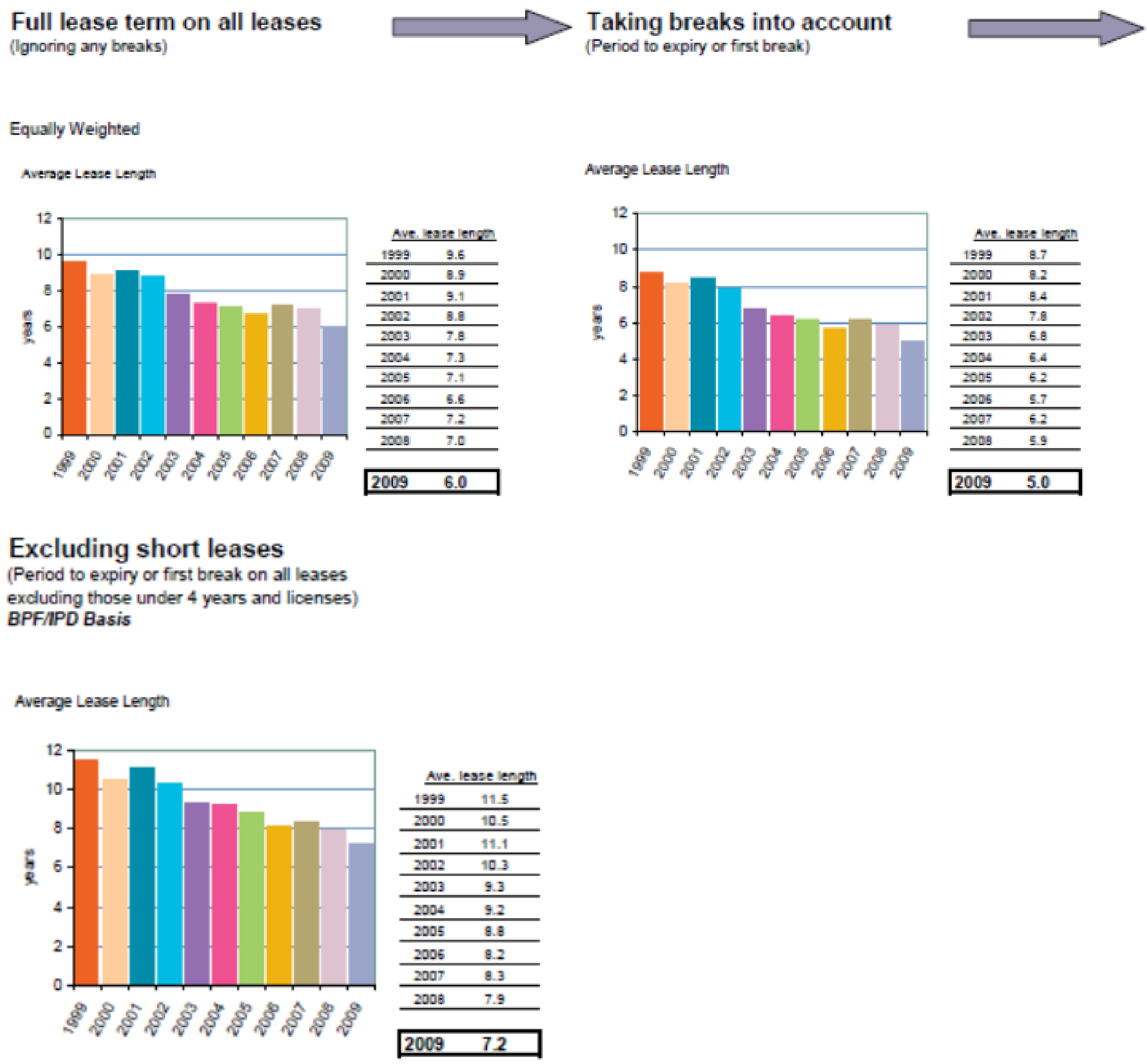

Figure 1: Headline Average Lease Length for All Property (BPF IPD Annual Lease Review 2010, p4

At this point, it is also worth noting that over the past couple of years, the average lease length in England has decreased considerably.

Figure 1 shows that the average lease length fell from 8.7 years in 1999 to 5.0 in 2009 (taking breaks into account). Consequently, it can be argued that the market will further regulate itself which in turn could make a legislative intervention unnecessary.

In their research, Maxted and Porter (2003) examine the impact of banning UORRs on commercial property lending. It is outlined that by outlawing upward-only clauses, it is likely that a greater risk would be attached to commercial property loans as the investment would lose the long term security of income. As a consequence, more equity would be required by the lending organisations thereby reducing the actual value of loans (p1).
Furthermore, it is outlined that lending is likely to be concentrated on experienced borrowers who will need more time, money and patience, as well as less risk adversity to close a deal (p20).
A report to the British Property Federation (a membership organisation devoted to representing the interests of all those involved in property ownership and investment) conducted by Cass Business School (Key and Almond 2004), which also analysed the impacts of banning UORRs, came to the conclusion that the introduction of up and downwards (two-way) rent reviews would lead to a cut in the allocations to property in institutional portfolios of between 2% and 5% (p1). In this study, the results are derived from an income simulation and several option pricing approaches. It is concluded that a ban on UORRs would lead to *"a general increase in risk and uncertainty attached to rental income streams"* (p15).
Moreover, the BPF responded to the Consultation Paper of the ODPM (BPF 2004), stating the negative consequences of a ban of upward-only clauses. Surely, however, as this organisation represents the interest of property owners and investors, it would not be unreasonable to assume an unfavourable bias towards an abolishment of UORRs? This would reflect the view that development and regeneration would be negatively impacted, attaching more risk and therefore attracting less investment, according to the BPF (p2). The Federation also claims that the ban would not only change the risk – return profile of property as an asset, manifesting itself through less capital being invested in the industry, but it would also lead to poorer terms for lending to the property industry (p2). Higher interest rates, shorter terms, and lower loan-to-value ratios seem likely to be predominant in the market according to the BPF's study. As a consequence of the raising of finance for commercial property projects being more difficult and expensive and with fewer lenders being prepared to provide finance, the overall regeneration activity could be reduced (p20).
According to the ODPM Consultative Paper – Summary of Responses (ODPM 2005), property owners and investors go as far as claiming that a ban would damage the whole UK economy, affecting not only domestic and foreign investment, but also development and regeneration (p8).
Apart from these arguments, which do not favour a ban of UORRs, the summary of responses to the ODPM Consultation Paper outlines the advantages of a legislative abolishment. Most importantly, a ban would ensure a more equitable sharing of the risk of holding property between landlords and tenants (ODPM 2005, p7). The current use of UORRs obviously puts the tenant in a disadvantage. The landlord profits in a boom as the rents increase according to the increase of the open market rental value and he also profits in a recession as the rents can only go upwards. Consequently, favourable voices to the ban claim that the abolition would help to make *"the property industry more responsive to market factors, helping to eliminate the boom/slump cycle"* (ODPM 2005, p7).

The English Government is aware of the negative impacts of UORR clauses in commercial leases. For that reason, three Codes of leasing business premises have been published since 1995. Research conducted by Cathy Hughes and Neil Crosby of the University of Reading (2010) outlines that many in the industry see *"the whole code concept as ineffective and unlikely to ever achieve changes to certain aspects of landlord behaviour"* (abstract). It is also stressed that the first Code of practice, published in 1995, was poorly disseminated (p3). Neil Crosby and Sandi Murdoch (RICS 2000) monitored the impact of the 1995 Code of Practice. Their report states that not only do small business tenants rarely fully appreciate the implications of an UORR clause (p1), but also that only 14% of tenants are aware of the existence of the Code, of whom the majority were professionally represented and were not small business tenants (p7). Consequently, the 1995 lease Code was a *"complete failure"* (p7).

The second Code of practice, published in 2002, had a better impact than the 1995 Code. However, Crosby and Hughes (2010) put emphasise on the fact that the *"dissemination of the second code was better, but not seen to be directly influencing leasing negotiations or practice"* (p3). Consequently, the Governments' aim of increasing the awareness of the Codes and therefore of alternatives of UORRs, was not achieved. The BPF assigned the blame on the occupiers as *"the majority of businesses that signed new leases containing UORRs were offered alternatives, but most occupiers turned them down on the basis that they were most expensive"* (Davey 2003). The BPF also claimed that there is a disparity as tenants wish to be offered more flexible leases on the one hand, but on the other hand reject them as they are unwilling to pay the price for it (Davey 2003).
In order to improve the flexibility of commercial leases, increase the awareness of the Codes and to avoid legislative intervention, the Government published a third Code in 2007. Even though the 2007 Code of Leasing Business Premises aims to encourage more flexibility with commercial leases, the research to monitor the dissemination, awareness and use of the 2007 Code (Crosby and Hughes 2009) shows that it has *"failed to reach small businesses and the improvements in the dissemination and awareness of the 2002 code over the 1996 edition has clearly stalled"* (p29).
The analysis puts emphasise on the fact that the Governments' aim of increasing the flexibility of commercial leases has not been achieved with any of the Codes. Consequently, the impacts of a legislative intervention have become a focal point of interest.

In Ireland, the application of UORR clauses is prohibited for all leases signed after the 28th of February 2010. The legislative intervention was as highly debated in Ireland, as it is in England. Surprisingly, one argument was not discussed before the coming into effect of the law, even though its development seems logical. Due to significant legal difficulties, the law could not be applied retrospectively to existing lease contracts (Hancock 2009). Consequently, the legislation provided *"little financial relief for those businesses in greatest difficulty as a result of their existing tenancy arrangements"* (Rent Reviews 2010). This formed a **two-tier market** which led to less demand for old leases tied to UORR clauses which in turn led to a significant decrease in the value of the lease.
As a result, when it comes to an abolishment of UORR clauses in commercial leases, the main focus of attention should not only be on the impacts on the financial sector, but also on the property sector in general. Furthermore, the example of Ireland shows that a possible legislative intervention has to be thoroughly analysed before eventually implementing it.

Having examined the problems attached to the use of upward-only clauses in English commercial leases, it is now imperative to consider potential alternatives to UORR clauses. As the adjustment of rents to an index is the most common rent review mechanism in Germany and is widely accepted in the German property market, the main focus of this study will be the application of index-linked rents. The most commonly used indices in commercial leases are the CPI and the RPI. As this is a measure of inflation, it might cause rents to change disproportionally as inflation and the property market do not always move in parallel. Consequently, rent indexation linked to a property index could possibly best reflect the open market rent for commercial property leases. However, *"the lack of a single, definitive property market index, and the differences in the indices that do exist, have led to confusion from both within and outside the property industry"* (Morrell 1991, p36). A "Tracker-Index" is needed as a basis for an indexation in commercial leases which is related to the property market. This index should be representative of the overall market and should contain a sufficiently large sample of properties in order to not be influenced by the effects of individual stocks (Morrell 1994, p17). The fact that valuations are usually used for the construction of property performance indices creates fundamental difficulties (Morrell 1991, p35). Not only do potential differences exist between valuations and actual sale prices, but also are reported returns likely to overstate true returns.
English property indices are, especially compared to other countries, very sophisticated. However, research has to be conducted in order to outline their strengths and weaknesses and to establish potential for improvement of English property indices.

ANALYSIS

To analyse the research question further, interviews with professionals of the property sector in Yorkshire (Leeds and Sheffield) and Manchester have been conducted. Figure 2 shows the location and role of the interviewee and the form of the interview. Apart from one interview, all interviews were conducted face-to-face in order to extract as much information as possible. As anonymity and confidentiality have been granted to the interviewees, no names or company names will appear in this paper. Numbers were allocated to each interviewee to quote them correctly in the following.

Interviewee	Role	Location	Form of the Interview
I1/I2	Investment	Leeds	Face-to-Face Interview
I3	Lease Advisory	Leeds	Face-to-Face Interview
I4	Investment	Leeds	Face-to-Face Interview
I5	Lease Consultancy	Leeds	Face-to-Face Interview
I6	Lease Consultancy	Leeds	Face-to-Face Interview
I7	Investment	Leeds	Face-to-Face Interview
I8	Lease Advisory	Sheffield	Face-to-Face Interview
I9	Lease Consultancy	Manchester	Face-to-Face Interview
I10	Lease Consultancy	Leeds	Interview in Writing

Figure 2: The Interview Sample

With the aim of analysing the data as thoroughly as possible, the interviews were sectioned into three main blocks: 1) upward-only rent reviews, 2) the role of the English Government and 3) Indexation.

Upward-only Rent Reviews

In order to understand how professionals perceive upward-only rent reviews and ascertain their level of experience, the interviewees were asked if they had any experience with UORRs. To begin with, all participants pointed out that almost every rent review they dealt with contained an upward-only clause and that upwards and downwards rent reviews are a very rare entity in English commercial leases. Interviewee I6 pointed out that upwards and downwards rent reviews would completely change the commercial property landscape as tenants would have to be prepared to pay more rent initially - around 10% - due to the fact that a lease without an upward-only clause is more risky for the landlord or investor.

When asked if the interviewees considered UORRs as a positive or negative instrument, that is if either landlords or tenants are disadvantaged by these clauses in commercial leases, the answers were not as straight forward. Depending on their respective representee (landlords, tenants in addition to investors or developers), the answers of the interviewees diverged. Generally, all interviewees were of the opinion that upward-only clauses are negative from a tenant's viewpoint and positive from a landlord's perspective. The participants outlined several reasons why UORRs are beneficial from a landlord's point of view:

- Provide certainty for the landlord
- Commercial property with a secure income stream can be bought and sold like a bond
- Give landlord security that rents will not go down
- Protect the investment value
- Help the investment market flow as it competes with other asset classes.

On the other hand, depending on the state of the market, upward-only clauses are a disadvantage for both landlord and tenants.

"In a rising market, landlords are disadvantaged because they can only ensure that their rental income keeps pace with open market values every three or five years depending upon the frequency of the rent review period. In a falling market, tenants are disadvantaged by having to pay a high rent fixed when economic conditions were stronger that doesn't take account of subsequent rental decline" (I10).

Furthermore, I4 summarised the positives and negatives of UORRs as follows:

"From a tenant's point of view it is a devilish product – why should they pay more than the property is worth because of the rigid system. But being realistic, even a tenant wants buildings of a certain standard and certain specifications and the landlords' investment numbers or development numbers stack up against the presumption of UORRs and that's really what underpins the UK investment and development market. Without it we would be in even greater difficulties than we are now in terms of the development pipeline as the numbers just wouldn't stack up."

So even though upward-only clauses seem to be generally negative for tenants and positive for landlords, they are still a basic feature of commercial leases in England. This is likely to be caused by two main reasons. Firstly, landlords are more often represented by professional bodies and are therefore better informed and more aware of the market. Many tenants don't even know that alternatives exist and are therefore happy to accept what is being offered to them. Secondly, traditionally the landlord has had better negotiating powers; he has been able to dictate the terms of the lease.

However, more recently, this balance of power has shifted. Consequently, with more availability of stock, the tenants gained more negotiation power. Nevertheless, the professionals' opinion relating to the shift of negotiation power is divided. I7 emphasised that "landlords are still in the driving seat", whereas I6 pointed out that "the landlord's got no negotiating position in most cases at the moment" and therefore "has got to take what he can get" (I1/I2).

From this shift in the balance of power – however big it is – two major trends in commercial leases emerged: firstly, the traditional 25-year lease is hardly ever granted anymore; shorter leases with a five year period and a lease renewal after five years are more common, which is effectively an upwards-downwards review (I9). Indeed, instead of alternative rent review mechanisms, tenants tend to push forward break options. Even though this is potentially a disadvantage for landlords, it is also a fairly high-risk strategy for tenants, as using a break option, simply to negotiate a rent reduction, requires more thought and effort from the tenant and possibly the valuation of alternative premises.

Consequently, even though most people are aware of the fact that UORR clauses represent a disadvantage for tenants, a change in people's perception does not seems likely. Many of the participants in this study stressed the fact that upward-only clauses are simply part of the English commercial lease tradition and therefore people want to sustain them. However, the tenants' lack of knowledge about alternative rent review mechanisms seems to be a major problem.

Role of the Government

As outlined in the literature review, the Government issued three Codes of Leasing Practice since 1995. When asked about the impact of these Codes on commercial leases, the interviewees' opinions were divided. Some of the participants were of the opinion that the voluntary Codes did have a positive impact. I6 stressed that they *"caused shorter leases. (...) The Codes did have an impact on the flexibility of leases"*. And I3 added that *"generally, landlords do think about the Codes"*. Moreover, I10 was of the opinion that "*it has made some of the larger, well-known landlords realise that the landlord and tenant relationship is a partnership and the latter need to succeed to ensure the continued profitability of the former".* Contrary to this however, the interviewees pointed out that as long as the Codes are not compulsory, they will have less of an impact than it was hoped to have.

"I don't think it [the Codes] was inventing anything that didn't already exist. I don't think it particularly achieved or delivered anything that wasn't already within the industry". (I4)

I8 hazarded the guess that around 80% of the people who are looking to take a lease have probably not cast their eye across the Codes. According to this section of the participants, this is due to the fact that most of the time agents are acting for landlords and the documents are essentially to help the tenants. Consequently, the general lack of knowledge of the tenants has a negative influence on the impact of the Codes of Practice.

Furthermore, several interviewees pointed out that the increasing flexibility of commercial leases has not been caused by the Codes but by market conditions. Accordingly, the market regulated itself and became more flexible with shorter leases and break clauses. Yet, I5 pointed out that *"if the market gets stronger for landlords again, they will be less willing to grant flexible lease terms".* Consequently, it needs to be noted that several participants were of the opinion that the voluntary Codes did have an impact on commercial leases. The extent of that impact and the role of market forces and its self-regulation cannot be measured. However, the reduction in lease length over the last 20 years as well as the improved flexibility in leases, with break clauses and rent-free periods, certainly reduces the difficulties of upward-only rent reviews.

There almost was an unanimous agreement from the interviewees that the Government should not ban upward-only rent reviews. There were a number of explanations for this.
"The Government just putting a ban on it would have a catastrophic effect, especially in the current market. It needs to be brought in slowly, not with legislation; this would cause more confusion than anything else" (I8)
Apart from the confusion a possible abolishment could cause, many professionals were of the opinion that the market is capable of regulating itself. The increased flexibility in lease terms made upward-only clauses effectively redundant. Hence, there is no need for legislation against these clauses.
Only one participant was in favour of the Government banning upward-only clauses as *"there would be more rent review work - from a surveyor's point of view – because at the moment rents are not contested. Without UORRs, rents could go upwards and downwards"* (I6). However, this professional also stressed that a ban would cause problems to the investment market.
Even though the professionals mostly agreed on the fact that the Government should not ban upward-only rent reviews, they were still asked about potential impact and effects that this ban could have. Three major effects were identified by most of the participants:

- Increase in yields
- Decrease in values
- Two-tier market

A ban on upward-only rent reviews is likely to cause higher yields as the investment per se becomes more risky. The security of the income stream is not guaranteed anymore. Depending on the alternative rent review mechanism, rents could go up and down instead of upward-only, or be linked to an index. This additional risk is likely to be reflected in higher yields.
Moreover, a ban would probably have an impact on the general demand for property and therefore the overall attractiveness of property as an investment. Consequently, a ban could lead to a significant fall in property values due to an imbalance of demand and supply in the market place. As outlined in the literature review, the Irish Government considered banning UORRs retrospectively. According to I10, the IPD has predicted a 20% drop in values if upward-only rent reviews are abolished retrospectively. This prediction is likely to be applicable for the English property market, too.
At least in the short term, a ban of UORRs could lead to a two-tier market, with assets with long leases and UORRs being more valuable than assets with an alternative rent review mechanism. However, most of the professionals agreed that the impacts and effects of a potential ban would only be short-term as the market will readjust eventually.

Indexation in English Commercial Leases

When asked about their experience with indexation as a rent review mechanism, all interviewees stated that they have little experience. However, I1 and I2 pointed out that it is growing as *"pension funds are after RPI increases because of the ageing population".* The continuing increase in older people leads to a draw on the pension pots. Consequently, pension funds use indexation in order to have a constant and secure increase in rents. Some participants commented that even though professionals do not deal with indexation on a daily basis, it does not mean that it does not exist as a rent review mechanism in England. If it is an index-linked review then usually the landlord will simply inform the tenant about the change in rent; a professional is not needed in most cases.
No general consent could be determined about the question of whether indexation constitutes a positive or a negative instrument. I2, I2, I3 and I7 agreed that it provides certainty for both landlords and tenants.
"It gives you security from a tenant's point of view. Rents will increase but only in steady amounts and you can budget for it. (...) For landlords it's also positive, they know for a fact that even in a worsening market they get an increase, whether it's a small or a big one." (I8)
Moreover, it was added by I7 that indexation is especially positive for small investors or tenants as they do not have to understand the property market. The respective index will deal with it and the investor has a guaranteed growth.
On the other hand, indexation has disadvantages, too. As previously discussed, the most significant disadvantage of UORRs is the fact that rents can only go up or retain their level, even in a downturn of the market. I6 put emphasis on the fact that indexation is even worse as rents will always go up, unless there is a deflation. Moreover, four participants agreed with I10 stating:

"It depends upon the state of the market. It gives both parties a degree of certainty, but would (a) lead to a tenant perhaps paying more than open market value during a recession and similarly (b) could mean that a landlord would be unable to secure the full value in stronger economic conditions when rents are out-pacing general inflation."
With regards to the sector in which indexation is predominantly used as a rent review mechanism, three sectors were mentioned most frequently. First of all, student housing and the hotel sector (especially budget hotels) commonly use indexation. This is done for two reasons. These developments are usually purpose build and as a consequence, the developers and investors need long leases in order to secure the income. With RPI increases, the asset will perform in line with the RPI and the rent will therefore, as long as there is no deflation – steadily increase. Secondly, there is a lack of evidence of open market transactions for rent reviews with Halls of Residence and Budget Hotels. Thus, indexation is used to avoid the lack of comparable evidence needed for open market rent reviews.
The second sector where indexation clauses are frequently used is the retail sector as the retailers' *"business plans are more closely aligned to indexation rises"* (I4). Moreover, according to I4, retailers can usually afford to take inflation-based rent review clauses as they do not get obsolescence in retail buildings. I3 stressed an important point, which was agreed upon by five other professionals:
"It's more about the actual property, not sector linked, more the kind of property and the market around it, if it's unusual building or a lack of evidence"
Consequently, with more obscure property, where comparables are missing and therefore open market rent reviews are not feasible, indexation is a well-established alternative.
When asked whether the interviewees consider rent indexation as an alternative to upward-only rent reviews, most of them agreed that indexation has been - and will remain to be - an option. Banning UORRs and replacing them exclusively with rent indexation could lead to a lack of understanding of the "correct" level of the market rent. I6 and I7 agreed that as the rents would no longer be linked to the actual market, but to an index (which is currently an inflation-based index in most leases), it would be difficult - if not impossible - to understand and estimate the movements of the market, given the reliance upon retrospective data relating to wider business cycles, rather than the property cycle itself. All interviewees considered indexation as a fair alternative (as long as both parties are well-informed) as *"it is a mechanism which both parties can use to create value"* (I4).

CONCLUSION

The most important finding of this study is that there is no clear '*YES*' or '*NO*' answer to the research question. This initial conclusion can be derived through analysing the conclusions relating to the single "blocks" of data analysis.
In the literature review it was emphasised that the replacement of UORRs would lead to a higher risk attached to property as an asset class, as the long term security of income would be lost. This would make property as an investment significantly less attractive. The interviewed professionals, especially those working in investment agencies, agreed to these findings, putting emphasis on the imperative impact that pension funds as investors have on the UK property market. If property lost its security as an asset, pension funds are likely to lose their solid standing within the UK economy. Consequently, the replacement of upward-only rent reviews could not only have a significant impact on the property market, but also on the UK economy on the whole. However, the interviewees were also of the opinion that tenants tend to be disadvantaged by UORRs in commercial leases.
The attitude of the interviewed professionals towards the Codes of Practice also corresponds with the findings in the literature review. The Codes did not have a significant impact on the commercial lease practice and alternatives to upward-only rent reviews are offered according to the state of the market and the respective negotiation positions of the parties. Many professionals (especially landlords and their representatives) are aware of the Codes, but do not consider them a helpful tool for lease negotiations.
With regards to a potential legislative intervention to ban UORRs, this is considered to be negative – both in the literature review and amongst the interviewees. The example of Ireland shows the negative effects a ban could have. Several interviewees stressed that the market is best left to adjust itself as a legislative abolishment could have unforeseeable consequences which could further distort the market. With the creation of two kinds of leases – leases before and after the 'due date' – a retrospective ban could create significant legal problems.

When discussing rent indexation in England, the interviewees considered retaining upward-only rent reviews to be the most preferable option, especially for certain sectors and properties. However, it was also agreed that indexation should not replace open market rent reviews as the tracking of an inflation based index does not reflect market rents. Consequently, the exclusive use of indexation as a rent review mechanism could lead to a distortion of not only values and rents, but also of the property market in general.

Two very interesting results of the study can be determined. Firstly, all interviewees agreed that the property market already adjusted itself. The traditional 25-year lease with five yearly rent reviews has been replaced by shorter leases with a term of typically five to seven years. Moreover, due to the state of the economy, the negotiation position of landlords and tenants has changed, leaving the tenants in a stronger position. Also, as outlined in the literature review, tenants generally do not seem to favour an abolishment of UORRs. Even now, being in a very strong negotiation position, they prefer upward-only rent reviews over a ban or rent indexation. This might be due to the fact that landlords usually offer lower initial rents with upward-only clauses which are an incentive for tenants.

In summary, it can be noted that rent indexation is a fair and reasonable alternative to UORRs. The continuing trend towards shorter leases definitely makes a legislative intervention by the Government unnecessary though.

Limitations

There are a number of limitations within this research paper which need to be considered in order to put this study in context.

Firstly, the time and resources available to the researcher were limited. Even though saturation of knowledge was observed by the researcher after ten interviews, the sample is nevertheless small. Moreover, as the study relies heavily on the opinions expressed by these ten interviewees, the generalisations could be constrained

Furthermore, the findings of this study could be biased as it is possible that the interviewed professionals generally do not favour open market rent reviews to be replaced by indexation. Landlord and tenant surveyors in particular could consider a potential ban of upward-only rent reviews as a threat to their job. Hence, a degree of bias could be expected from the interviewees as they have a vested interest in protecting their own livelihoods. However, all interviewees seemed to give honest answers as they are of the opinion that the market adjusted itself and therefore, a ban of UORRs is not necessary.

Another limiting factor could be that the interviewed professionals represent different clients: landlords, tenants and investors or developers. Accordingly, the expressed opinions could have been dependent on the respective representee. However, as it was the aim of this study to examine the research question as thoroughly as possible, a variety of different opinions due to the respective representee, can only increase the value of the research findings.

Furthermore, the geographical limitation – with interviews only being conducted in Yorkshire (Sheffield and Leeds) and Manchester – means that the research findings cannot simply be extrapolated on the UK property market in general.

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AN EVALUATION OF A BREEAM CASE STUDY PROJECT

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ABSTRACT

The purpose of this paper is to ascertain though a case study, the financial benefits in a Building Research Establishment Environmental Assessment Method (BREEAM) healthcare construction project. It uses a mixed primary data collection methodology through a case study approach. The aim is to provide a discussion on BREEAM: Healthcare and its application with regards to the credit scoring scheme and to analyse the financial benefits of implementing BREEAM on a construction project.

Keywords: BREEAM, Health Care, Construction Projects.

INTRODUCTION

The Construction Industry's contribution to climate change and resource depletion presents two of the greatest challenges facing building professionals today' (Dye and McEvoy, 2008).
To reduce the negative effect imposed by the Construction Industry on the environment the most common and widely used Environmental Assessment Tool in the UK is BREEAM (Building Research Establishment Environmental Assessment Method).
This paper investigates BREEAM and its application in the Construction Industry through the means of primary and secondary data collection methods, consisting of a case study, interviews, questionnaire and review of the existing information.

IMPLEMENTATION OF A BREEAM SCHEME

BRE Group (2010, p8) states that the main aims of BREEAM are *'...to mitigate the impacts of buildings on the environment; to enable buildings to be recognised according to their environmental benefits; to provide a credible, environmental label for buildings; [and finally] to stimulate demand for sustainable buildings.'*
The BREEAM assessment of a project is carried out by a licensed independent assessor, who is usually involved throughout the development and carries out a final assessment of the project, ultimately giving the building a final BREEAM score and rating.

A summary of the BREEAM assessment process carried out by the assessor is shown in Figure 1 provided by Grace and MacFayden (2006). Once the scores for each category have been finalised they will be combined to give an overall rating. This is done by applying the BREEAM environmental weightings shown in figure 2, provided by BRE Group (2010, p27). To assist the BREEAM assessors 'BREEAM Scheme Documents' are implemented. These technical guidance documents are created for specific building types and contain information that is used to aid the assessor in their duties (BRE Group, 2010, p12).

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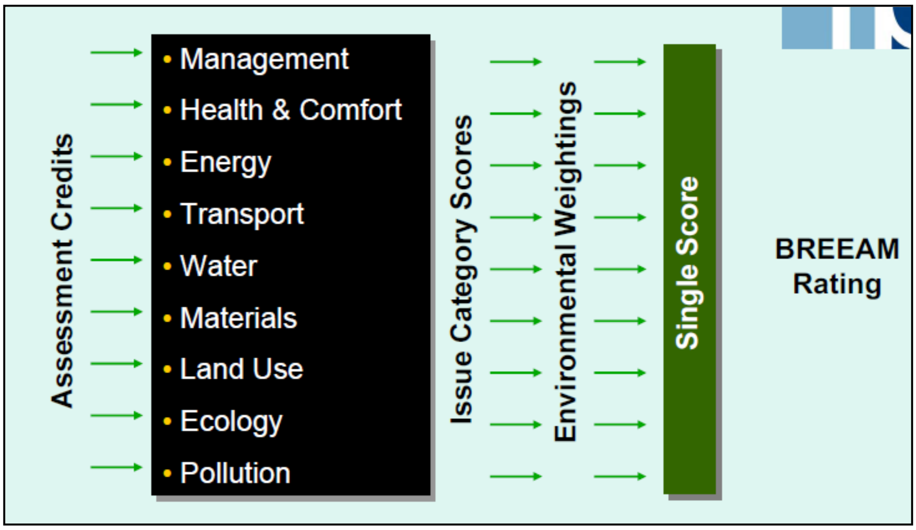

Figure 1: Process of BREEAM Rating Calculation (Grace and MacFayden, 2006)

BREEAM Section	Weighting (%) New builds, extensions & major refurbishments	Weighting (%) Building fit-out only (where applicable to scheme)
Management	12	13
Health & Wellbeing	15	17
Energy	19	21
Transport	8	9
Water	6	7
Materials	12.5	14
Waste	7.5	8
Land Use & Ecology	10	N/A
Pollution	10	11
Innovation	10	10

Figure 2: BREEAM Environmental Weighting (BRE Group, 2010, p27)

Advantages	Disadvantages
Robust	Complicated
Detailed	Inflexible
Well Known	Poorly Understood
Easy to Specify	Often Poorly Specified
Independent	Extra Cost
Tailored to each building type	Comparing apples and pears?

Table 1: Advantages and Disadvantages of BREEAM (Grace and MacFayden 2006)

Benefits of BREEAM

BREEAM can be used in a number of ways across various professions ranging from clients, developers and design teams and all the way to the building managers (BREEAM, 2010). All operations aim to help achieve a sustainable building that is friendly to the environment. Grace and MacFayden (2006) show advantages and disadvantages of BREEAM summarised in Table 1.

There are indirect benefits of BREEAM as described in research carried out by Holmes and Hudson (2001, p68) found that *'...one of the important indirect effects of assessments [in this case BREEAM] has been the encouragement of teamwork and dialogue between various sectors in the building industry.'*
There is a debate surrounding the cost effectiveness of the implementation of BREEAM. Case study research carried out by Holmes and Hudson (2001) found that the building costs would increase by 1% in order to obtain an 'excellent' BREEAM rating, contradicting previous research by others.
Cartlidge (2006) comments that 'it is commonly assumed that consideration of sustainable issues will rack up building costs, but this may not necessarily be the case' this view is reaffirmed by Cyril Sweett (2005, p1) who states *'...that significant improvements in building sustainability performance can be achieved at very little additional cost.'*
In contrast NAO (2007, p12) shows that *'...even though the BREEAM assessment process is not in itself expensive (except as a proportion of the costs of very small projects), the cost premium associated with designing a building to achieve a BREEAM rating can be prohibitive.'*
The associated costs are increased due to the introduction of green building materials '...which often cost substantially more than the materials they replace' (Kibert, 2008, p12). There are however, ways of achieving BREEAM credits without introducing costly green building materials (NAO 2007, p12). BREEAM is becoming the most implemented environmental assessment tool in the UK.

RESEARCH METHODOLOGY AND DATA COLLECTION

CASE STUDY METHOD

Woodside (2010, p1) describes case study research as '...an inquiry that focuses on describing, understanding, predicting, and/or controlling the individual) i.e., process, animal, person, household, organization, group, industry, culture, or nationality).' The study involved the investigation of a construction project in Driffield of a Primary Care Centre.
The use of a case study was advantageous to the research project as it offered an in-depth view, provided a clearer insight and enabled the researcher to obtain primary data.
The qualitative data provided draws on 'individuals' experiences of events, processes and systems' (McMillan & Weyers , 2010 p127) The interview questions were open which meant that the primary data collected was opinion based.

QUESTIONNAIRES

To gather a professional opinion on BREEAM and its application in the construction industry the researcher conducted a questionnaire and distributed it amongst members of the construction industry working within various professions. Further, it was felt to be the most efficient way to gain a wide spectrum of information.
A 5-point Likert scale was utilised and worded response categories used as it made it easier for respondents to clearly establish their opinions, distributed via Google Docs. The questionnaire link was e-mailed to all participants.

DATA RESULTS AND ANALYSIS

A total of 45 questionnaires were distributed, from the distribution there were n=20 responses, representing a 44% response rate. Table 2 shows the responses from the various professions. All of the respondents were anonymous, to protect their interests. The results were analysed using mean descriptive statistics including the calculation of mean and standard deviation.

Respondent's Roles	Number of Responses	% of Responses	Cumulative Responses
Quantity Surveyor / Assistant Quantity Surveyor	13	65.00%	65.00%
Construction Manager / Site Manager	3	15.00%	80.00%
Engineer / Assistant Engineer	1	5.00%	85.00%
Estimator / Buyers	2	10.00%	95.00%
Architect		0.00%	95.00%
Other	1	5.00%	100.00%
Total	20	100.00%	

Table 2: Questionnaire Responses

The case study project

The focus of the case study was a two storey medical centre development (See Figure 3). With a foot print of $680m^2$ and a gross internal floor area of $1377m^2$, the development involved the demolishment of unutilised buildings to facilitate the proposed development.

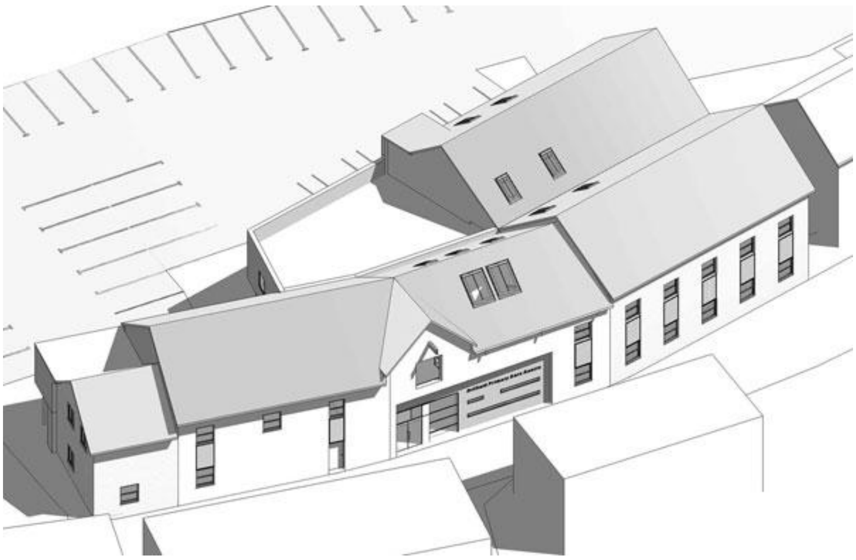

Figure 3: Two Storey Medical Centre - Driffield

The development was designed to fit within the foot print of the previous building so as to '...maintain the characteristics of the conservation area and therefore the general foot print, mass and height of proposals replace existing structures that require demolition to facilitate this development'(HDP, 2009, p11). The new Primary Care Centre is based on East Gate North Road in Driffield and accommodates a GP surgery facilities to serve the general community.

BREEAM RATING OF THE CASE STUDY PROJECT

The case study project had to be BREEAM rated excellent so it was necessary for a licensed BREEAM assessor to be employed to carry out a BREEAM assessment to ascertain where the credits were achieved and what needed to be improved upon to achieve the credits needed to attain the Excellent rating. Table 3 shows a summary of the credits that were available and the credits that were achieved along with the overall rating that was achieved.

Section	Credits Available	Credits Achieved	Weighted Section Score
Management	18	17	11.33
Health & Wellbeing	17	13	11.47
Energy	26	17	12.42
Transport	13	10	6.15
Water	9	9	6.00
Materials	15	10	8.33
Waste	6	5	6.25
Land use and Ecology	10	5	5.00
Pollution	12	8	6.67
Total	**126**	**94**	**73.63**

	Credits Available	Achieved Credits
Total Credits	126	94
Weighted Score	73.63	
Rating	Excellent	

Table 3: Summary of BREEAM Credits Breakdown & Overall Rating

CASE STUDY INTERVIEWS

Interviews were based on the case study project and its relation to the BREEAM scheme. Opinions on the following subjects were sought:

- Green Materials,
- Construction Programme,
- Construction Costs,
- Quick Win BREEAM credits,
- Overall Opinion of BREEAM

THE USE OF GREEN MATERIALS

Kibert (2008) notes that there are increased costs associated with the introduction of green materials to construction project. In a similar study, Holmes & Hudson (2001, p72) reaffirms this view. Did the use of green materials, (Materials rated A), have any effect on the build of the Medical Centre?
To achieve the BREEAM Healthcare 2008 credit waste2 there had to be the use of recycled materials on the project in excess of 25% of the total material use. Using the recycled hardcore resulted in 1 BREEAM credit being awarded, according to Hare (2011) there was no effect on the quality of that build. The material used on the case study project was sourced over 70 miles away from the project, in total there was 720 tonnes of 6F2 (recycled crushed brick / concrete hardcore) used, which equates to 36 wagon loads. There is an inherent difficulty in sourcing materials to meet the BREEAM constraints' Further, the introduction of green materials resulted in a negative impact on the construction programme due to long lead-in times for materials which where a requirement of BREEAM. The green

materials resulted in increased costs an example would be the type of insulation used (Celotex) which is considerably more expensive than the traditional insulation available.

THE CONSTRUCTION PROGRAMME

One of the effects of the use of Green Materials Rated 'A' was an increased construction programme mainly due to M&E installations, in particular the Heat Recovery System and Solar Photo Voltaic Cells.
The Solar Photo Voltaic Cells a roof mounted system used to provide the power for low and zero carbon technologies achieved the BREEAM Ene5 credit, installed at a cost of £18,135.00.
Squrbo Xbox Horizontal Ecosmart Heat Recovery System installed to recover energy from the exhaust air system (Fig. 4) at a cost of £54,250. The system had a long lead-in time resulting in a detrimental impact on the construction programme.

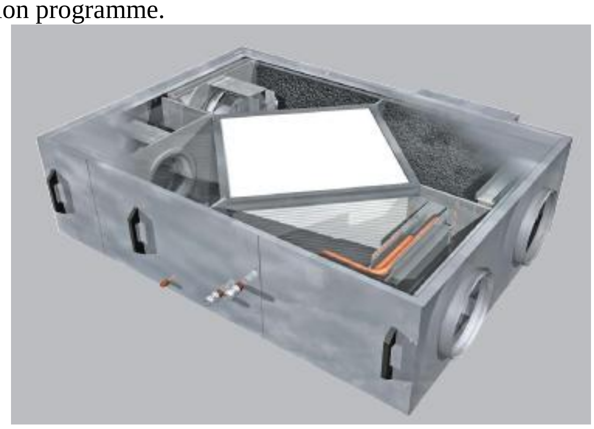

Figure 4: Squrbo Xbox Horizontal Ecosmart Heat Recovery Unit, Nuaire (2010)

It was found that the introduction of BREEAM did have an effect on the construction programme, but according to Jackson (2011) who stated that 'these effects can be limited or even reduced' However, some of the subcontractors did face a steep learning curve, but did eventually overcome the problems they faced and were able to complete their works, has observed by Hare (2011)

CONSTRUCTION COSTS

Holmes & Hudson (2001) found that the introduction of BREEAM results in increased construction costs. To attain a BREEAM Material6 credit specialist insulation had to be used which offered the same thermal values as other insulations but had lower embodied energy this came with an increased cost. Table 4 shows the comparison between a typical insulation and the low embodied energy insulation.
Table 4 further shows that the insulation with the low embodied energy provides the same thermal conductivity as the insulation with the higher embodied energy but costs 43% more. Despite the extra cost of the insulation it was utilised as it was a requirement of the specification to achieve Materal6 (Insulation) credit.
To achieve other credits there was a requirement to carry out surveys on the existing site and the new development. The surveys consisted of a BREEAM assessment, Thermal Model, Ecology Report and Acoustic report & testing. All of the reports came with a consultancy cost which added to the overall construction costs.
The introduction of BREEAM to the case study project resulted in an increased construction programme which according to Meredith (2011) does have effect on the construction costs as the running costs are increased, an example would be site preliminaries.

Insulation Type	Embodied Energy	Thermal Conductivity (W/mK)	£/m2	Qty in BofQ (m2)	Total Cost	Cost Difference
*Knauf Earthwool Loft Roll 44	Low	0.044	£4.60	445	£2,047.00	£1,161.45
**Superglass Multi Roll 44	High	0.044	£1.99	445	£885.55	

**Costs / Information as per Driffield Medical Centre B of Q (2010)*

***Costs / Information as per www.tradingdepot.co.uk (2011)*

Table 4: Roof Insulation Comparison

QUICK WIN CREDITS

Quick win BREEAM credits are credits that are relatively easy to achieve. Interviewees were asked if any ‘quick win’ BREEAM credits were achieved on the case study project.
The responses show that ‘quick win’ credits were achieved and that actions required to achieve them were relatively easy to implement. For example, the requirement to carry out surveys (Acoustic, Air Test, Ecology etc) are classed as quick wins.
Meredith (2011) showed that acoustic tests before and after the development was relatively easy to implement, carrying out the survey gained the BREEAM Pollution8 credit and has little impact upon on the programme.
To achieve the BREEAM Transport3 credit there was the requirement to install a cycle shelter, figure 5, installed at a cost of £2,833.00.

Figure 5: Circo Cycle Shelter, JJM Building Supplies (2011)

However, the cycle shelter was oversized for the case study project. Designed to house 16 bicycles, based on the number of people occupying the completed development, this ratio is stipulated by BREEAM.
Hare (2011) believed that a cycle shelter half the size of the one installed would have sufficed. This demonstrates one area of BREEAM that has no benefit to the client as a cost is outlaid for something that will not be fully utilised by the occupants.
Other quick wins include bird & bat boxes (Scarborough 2009, p8). The ecology survey carried out prior to the demolition of the existing buildings found that there were no bats or signs of use by bats were noted during the external inspection.’
Despite this result bat boxes were incorporated into the project as a stipulation of BREEAM. Although a BREEAM credit was achieved the incorporation of the bat boxes was not necessary or even utilised.

The introduction of a suitable landscaping scheme is a relatively easy method of attaining a BREEAM Material2 credit. The total cost of the landscaping scheme was £4,335.00.
A similar case study carried out by Holmes & Hudson (2001, p72) found that in relation to its BREEAM credits '...the redesign of landscaping to encourage bio-diversity was of minimal cost and was implemented.' In this scenario BREEAM was easily implemented and utilised.

SUMMARY OF THE INTERVIEW FINDINGS

- The process found that the introduction of BREEAM had an effect on the case study project in terms of the construction costs and programme. It was found that both were increased because of the introduction of BREEAM.
- The application of A-rated materials (green materials) did not have any effect on the quality of the build of the case study building, but it did however have an effect on the construction programme and construction costs.
- The introduction of environmentally friendly insulation offered the same thermal insulation qualities as that of traditional insulation but had increased the total cost of the roof insulation by 43%.
- The interview process found that due to the introduction of BREEAM the design of mechanical and electrical installations had a significant impact on the construction programme, Due to the required 'lead-in' times.
- Subcontractors faced a steep learning curve because of the introduction mechanical and electrical installations that had to be highly energy efficient as stipulated by BREEAM which resulted in longer installation periods and increased the construction programme.
- Increased construction costs due to the introduction of BREEAM. However, with the correct planning at tender stage allowances could be made, this reaffirms the findings of Sweett (2005, p1) that '...cost consultants, [estimators], can add a significant margin of as much as 10% to capital costs to allow for more sustainable solutions.'
- Quick win credits were relatively easy to implement, but not always necessary to meet the correct design criteria.

QUESTIONNAIRE RESULTS

Table 5 shows a summary of the responses gathered from the questionnaires.
The data collected has been analysed as previously discussed in this report and the mean responses along with the standard deviation are shown in figure 6.

- Based upon the findings of Kibert (2008) and NAO (2007) participants were asked whether the introduction of materials rated A in the Green Guide to Specification improved the quality of a new construction development. 55% agreed. The mean response value 3.30, with a STDev 0.91 showing that although 55% of the respondents agreed the mean score suggests that there was neither a positive or negative effect on the quality of construction development.
- Participants were asked to respond to the statement 'The use of BREEAM can result in a construction project having increased costs', the mean response value was 4.40, with a STDev of 1.02. The mean response showed that a large percentage of the respondents agreed, with 65% in strong agreement.
- Participants were asked to respond to the statement that quick wins do benefit the client and developer, the mean response value 3.35, with the STDev 1.06. It was the opinion of 55% of the participants that quick wins are beneficial.
- Participants were asked to respond to the statement 'The use of BREEAM can result in an increased construction programme', the mean response value3.35, with a STDev 1.15. It was the opinion of 55% of the participants that the construction programme was increased, reaffirming the interview findings.
- Research carried out by Holmes and Hudson (2001) suggested that an indirect effect of BREEAM was the encouragement of teamwork and dialogue between various sectors of projects. Opinions of the participants differed as it was found that the mean response was

2.75, with the STDev 1.18. Suggesting participants thought that there was no increased communication between different sectors.

- Participants were asked if BREEAM was robust and easily applied to any project. The mean response 3.00, with the STDev 0.95 was found to be inconclusive as the majority of the response was neutral.
- The participants of the questionnaire were asked to respond to the following statement: 'The introduction of BREEAM results in increased pre-contract design work.' This statement was created based on the findings made during the interview and thus participants' opinion was requested. It was found that 90% agreed. The mean response was 4.30, with the STDev 0.95.
- Research by Holmes & Hudson, (2001) found that the introduction of BREEAM results in increased construction costs. The questionnaire asked for the opinion of participants on BREEAM's value for money, this is considered a low percentage.
- The mean response was 2.50, with the STDev 1.02. The study found that 20% of the participants believed that BREEAM helped to provide the client with a building that was value for money.

	Number of Responses					
Statements	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
The use of materials rated A in the Green Guide to Specification as prescribed by BREEAM improves the quality of a new construction development.		11	5	3	1	20
The use of BREEAM can result in a construction project having increased costs.	13	4	2		1	20
Quick Win' credits on a BREEAM scoring scheme can benefit both the client and developer of a construction project.	1	11	4	3	1	20
The implementation of BREEAM results in an increased construction programme	3	8	3	5	1	20
BREEAM helps to provide the Client with a building that is value for money		4	6	6	4	20
BREEAM is robust and easily applied to any construction project	2	2	11	4	1	20
BREEAM helps to stimulate the demand for sustainable buildings		12	4	3	1	20
BREEAM helps to encourage teamwork and dialogue between various sectors in the construction industry		7	4	5	4	20
The introduction of BREEAM results in increased pre-contract design work	10	8	1		1	20

Table 5: Questionnaire Results

THE APPLICATION OF BREEAM RATING SCHEME

Hare (2011) explained that actual BREEAM rating will not be known until 6 months after its completion.

There is a growing acceptance that environmentally sustainable construction is where the construction industry is headed with BREEAM being the main driving force behind it. With time the true impact of greener construction will be evident in the future. The introduction of green buildings help to reduce the negative effect the construction industry has on the environment.

If the BREEAM 'excellent' rating is not achieved the case study project will not be given a completion certificate by the contract administrator, which will result in the main contractor not receiving their final payment and release of retention. So it will be in the main contractor's interest (the main contractor will have to go back to site and retrofit equipment) to achieve the excellent rating in order to receive final payment.

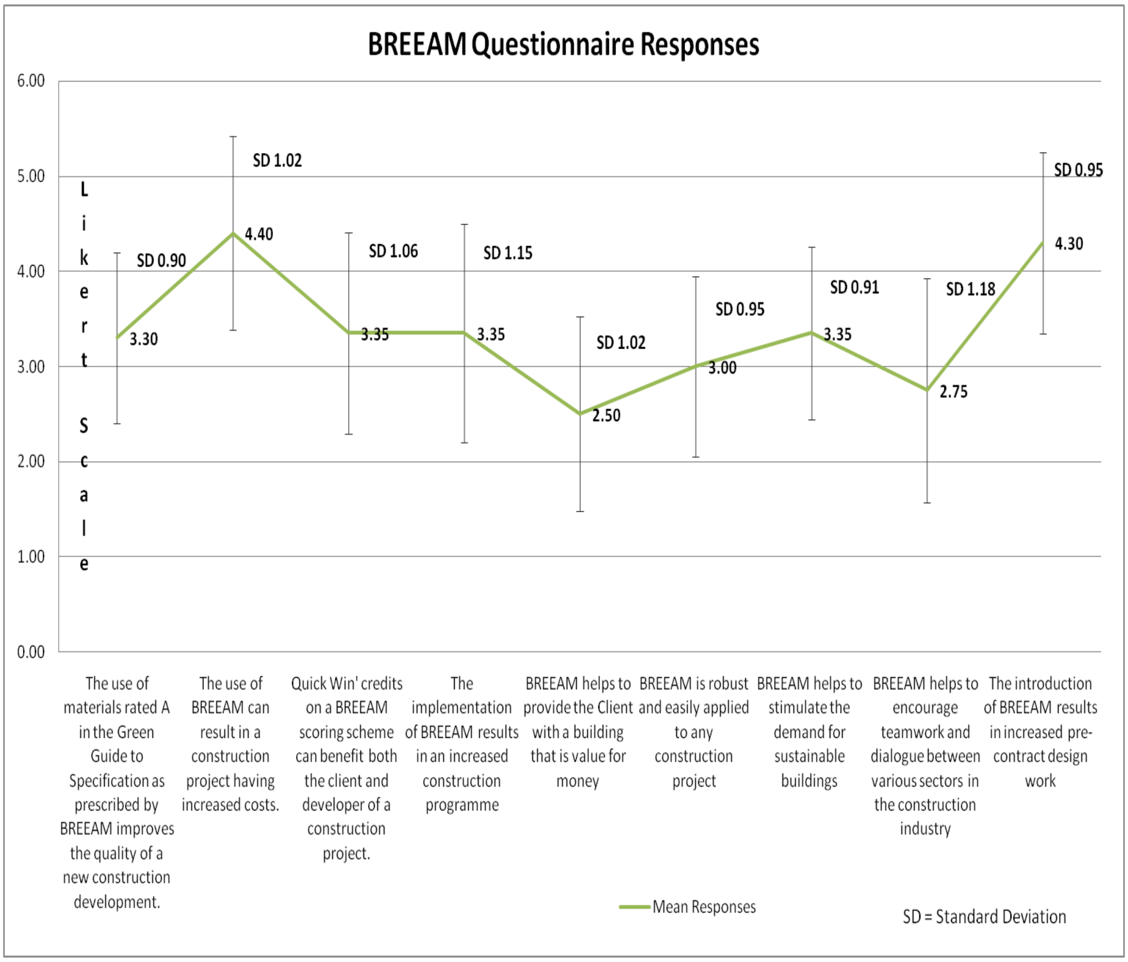

Figure 6: Mean Analysis of Questionnaire Responses

DISCUSSION AND CONCLUSION

The report discussed the findings researchers such as Kibert (2008) who believes that there are increased costs associated with the introduction of green materials to construction project. It was found that the construction costs were increased.

The primary data collected found that the introduction of green materials did not affect the quality of the case study project although Kibert (2008) explained that green materials can cost significantly more

than traditional materials, and NAO (2007) discusses that the BREEAM rating system is malleable, meaning that a rating can be achieved at minimum cost.
It was interesting to see that the introduction of green materials has a positive effect on the environment but has no affect on the quality of a construction development. There is however the negative impact on construction costs in that they are increased as proven by the findings made during the interview process and the findings of other researchers.
The report discussed the findings of Holmes & Hudson (2001) who found that the building service engineers found it difficult to source equipment required that was a requirement of BREEAM. The case study primary data showed that the application of mechanical & electrical installations had a negative impact on the construction programme due to long lead-in times.
Both the data collected from the interview process and the secondary data collection shows that the introduction of BREEAM on a construction development resulted in an increased work-load for the Mechanical & Electrical sub-contractors / engineers, with most of the work being in the design of the systems.
It was found that the introduction of BREEAM resulted in increased pre-contract design work, which corroborated with the both primary data collected and the secondary data collection.
One of the reasons for the increased pre-contract design work maybe due to the fact that the design and installation of the mechanical and electrical systems came under the energy section of BREEAM which has a high weighting percentage.
The increased construction costs was due to the introduction of BREEAM, but with the appropriate planning at tender stage allowances could be made for these costs which reaffirmed the findings of Sweett (2005) explaining that cost consultants / estimators could add an allowance to capital costs of up to 10% to allow for BREEAM related installations and solutions.
This report has discussed the case study research carried out by Holmes and Hudson (2001) who found that the building costs would increase by 1% in order to obtain an ‘excellent’ BREEAM rating, which was found to be contradictory to previous findings by others.
The findings of the interview process and secondary data collection show that the client will be provided with a building at an additional cost due to the introduction of BREEAM. The primary data collected reaffirmed this view.
The research by Holmes and Hudson (2001) found that an indirect effect of BREEAM was that it encouraged teamwork and dialogue between various sectors of the construction industry. The primary data showed that this was not truly accurate, as participants did not declare increased communication between varying sectors during the process to obtain BREEAM accreditation.
The research aim was to examine the BREEAM credit scheme with particular attention to credits which are so called 'Quick Wins' to ascertain the financial benefit to the Client. The questionnaire results found that the opinion of 55% of the participants that quick wins are beneficial, which was contradictory to the findings of the interviews.
The interview procedure found that quick wins were achieved on the case study project with an example being the incorporation of bat boxes. Although, it was found that there was no evidence to prove the presence of bats at the existing site of the case study project bat boxes were incorporated into the project as was a stipulation of BREEAM, this shows that the incorporation of the bat boxes was a unnecessary cost to the client.
The report further identified the research method used that to gather the information required and a literature review has been carried out to investigate BREEAM methodology.
An overview of BREEAM has shown how it is implemented in the Construction Industry in terms of the scoring and credit scheme. The advantages and disadvantages of BREEAM have been outlined, the robustness of scheme being the main advantage and cost being one of the potential disadvantages.
Design and lead-in times of M&E services have to be adequately monitored in order to bring the project within budget and on time.
The report recognises that BREEAM has a very important standing in the Construction Industry and has a very positive effect on a building’s environmental impact. There are however associated costs of scheme implementation, highlighted through the primary data mixed-methodology through the means of a case study.
The primary data collected has shown that the introduction of BREEAM lead to an increased construction programme and increased construction costs. However the client takes ownership of a building which is environmentally friendly that costs more than a building that is not BREEAM rated.

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A PROJECT MANAGEMENT STRATEGY BASED ON SHARING THE BENEFITS OF INCENTIVISED CONTRACTS

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ABSTRACT

This study aims to examine the success of sharing the benefits of incentivised contracts and to deliver strategic planning for the way ahead in a challenging environment. This work provides evidence for or against the use of incentivisation as a procurement approach.

The latest recession has prompted the industry into reverting back to traditional practices such as 'lowest tender wins', away from innovative 'best practice' approaches developed over the last 10 years. This research has found that whilst in general the industry is indifferent to incentivised contracts, those who have been engaged into such contracts have found that they deliver improved performance above and beyond client expectations in terms of time, cost and quality requirements. The findings of this research strongly suggest that the use of incentivised contracts should be a serious consideration for both public and private sector procurement.

Keywords: Best Practice, Construction, Incentivisation, Partnering, Procurement.

INTRODUCTION

The UK construction industry has traditionally operated using competitive tendering as its main method of contract procurement. This has frequently been characterised as a process of winning contracts with low bids and then inflating the price once work begins, potentially setting up adversarial relationships between clients and contractors. Encouraging partnering frameworks and incentivised approaches have been slow to evolve. Some progress emerged in the 1990's such as the Latham Report (1994) and the Egan Report (1998). These emphasised the effect that a properly designed, jointly adopted, incentive arrangement could have on generating cost savings. More recently (2001) the CIRIA C554 report on incentivised schemes reviewed the merits and drawbacks in a number of UK construction contracts noting that "*industry observers have commented that there had to be a better way of procuring and completing a construction project*" (Richmond-Coggan, 2001). Although generally in favour of incentivised schemes CIRIA C554 did comment that the success of these schemes did entail commitment to adopting new working practices (hinting perhaps that the traditional mentality of the construction industry might find this difficult).

The current weak economic climate has not helped promote the adoption of incentivised contracts and new working practices. The need to maintain cash flow in the face of declining construction activity has led to desperate attempts by construction firms to win contracts at any cost, frequently involving unrealistically low tenders. The consequences can be serious. The well publicised collapses of both Connaught and ROK, whose business models had been regarded as sound, underscore the results of "buying" contracts at any cost.

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The aim of the research is to examine the role incentivised contracts can play in generating successful contract completions. The central hypothesis is that construction industry firms can benefit from adopting properly designed incentivisation, and that clients and contractors can benefit mutually. This hypothesis will involve several related issues. The first is whether, and to what extent, the current economic climate has affected the institutional setting in procurement terms, and if the current recession has led to a return to more traditional methods. The second issue is how risks and responsibilities are shared in both traditional and incentivised contracts. This brings us to the crux of the story; can properly designed incentivised contracts be seen to give a competitive edge to clients and contractors?
The methodology consists of gathering data from questionnaires and interviews; assembling management level views from both client and contracting firms and input from the "sharp end" such as operatives and sub-contractors. The intention was to test for any interesting relationships that might emerge, such as comparing what individuals might believe about incentive schemes in general compared to what their actual experiences seem to indicate. Do actual experiences suggest incentivised contracts provide measurable benefit, even in a recession?

LITERATURE REVIEW

As noted in the introduction the 1990's saw the emergence of a number of government papers promoting the benefits of incentivised approaches to contract procurement. Six papers stand out for attention. These are Latham (1994), CUP58 (1997), Egan (1998), Richmond-Coggan (2001), Vrijhoef and de Ridder (2006) and Wolstenholme (2009). Here we will briefly outline the 'official' line that emerged supporting the idea that incentivised contracts are a positive way forward, noting how these views have been commented on in the literature. Then to finish we include a specifically critical commentary Green (2001) by way of balance.

Emphasis was placed on the importance of incentivisation in achieving best value for money in the Government paper 'Setting New Standards - A Strategy for Government Procurement' May 1995, undoubtedly following the needs identified in the Latham report. "*In respect of contracts, a concept developed in US defence procurement is the value incentive clause. This facilitates the division of savings resulting from clients and contractors working in partnership to seek innovation through functional methods*" (House of Commons, Environment, Transport and Regional Affairs 1998).
In an earlier 'white paper' publication by the former Central Unit on Procurement (CUP); now part of the OGC, incentivisation is defined as: "*A process by which a provider is motivated to achieve extra 'value added' services over those specified originally and which are of material benefit to the user. These should be assessable against pre-defined criteria. The process should benefit both parties*" (CUP 58 1997)
According to Latham "*The most effective form of contract in modern conditions should include:- […] Providing for incentives for exceptional performance*" (Latham 1994)(pg37). Egan reiterates this in his later report "*Clients should not take all the benefits: we want to see proper incentive arrangements to enable cost savings to be shared and all members of the team making fair and reasonable returns*" (Egan 1998)(pg30).

Incentives such as shared gain/pain are designed to improve relationships and commitment to any one project. Typically construction projects are isolated operations based on demand at a particular period in time, which presents a barrier to fully integrating a supply chain into any incentive. Vrijhoef and de Ridder agree that "*Still one of the major barriers to supply chain integration is formed by the fragmentation of the industry, and particularly the fragmented production environment of construction.*" (Vrijhoef and de Ridder 2006).
To apply an incentive scheme and hence collaborative working a termed partnership would need to be adopted and committed to allowing relationships to outlast individual projects further fostering trust between contractor, client and supply chain. "*The co-operation between main contractor (assembler) and subcontractors and suppliers are subjects of supply chain management, […] In addition SCM is about integrating subcontractors' and suppliers' skills and competencies in order to achieve performance improvement, and to overcome barriers to implementing supply chain management arrangements with SMEs*" (O'Brien, London and Vrijhoef, 2002).

CUP 58 insists that in order for incentivisation to be successfully used best procurement practices will have to be adopted. "*These include: output based specifications, market knowledge, cost management, performance measurement and effective contract managemen*t" (CUP 58 1997). "*Further advancements to partnering, termed alliancing, have also been successfully utilized in the construction industry. Such arrangements are underpinned by an incentive scheme, whereby the rewards of the contractor and, indeed, the owner are linked directly to actual performance during the execution phase of the project*" (Tang et al. 2008; Scott 2001).

Good procurement practice is at the core of incentivisation, as would be expected for any acquisitioning process. The SAP publication states it is "*essential that procurement lead the way in delivering savings*" (SAP 2009) fortifying the belief that a solid base (foundation) provides a framework for best project performance.
Successful adoption of project partnering is proven to lead to the strengthening of reputation for the parties involved as well as final account certainty and overall time, cost and quality improvements. Partnering and collaborative working are currently recognised as industry best practice.
Significantly the Wolstenholme report states that "*Around 90% reported a positive impact from Rethinking Construction, but this has been limited by partial uptake*" (Wolstenholme 2009). The nature of the industry is such that it is "*characterized by a strong resistance to change, attributable to the strong, rigid nature of construction culture*" (Aouad, 2002). The Wolstenholme report identifies complaints "*about too much bureaucracy, too many targets, [and] a 'tickbox culture'*" (Wolstenholme 2009). Engagement with Rethinking Construction has been hindered by the adversarial nature of how it was issued, comparable to Health and Safety legislation "*reference was made to the quality of training in health and safety and the tendency to over-rely on carding schemes at the expense of genuinely raising competence.*" (Wolstenholme 2009).

In order to realise the potential gains from an incentivised contract scheme, the business goals of both (all) parties must be aligned. "*This should consider the commercial objectives of the contractor and the desirable outcomes, as defined by the client(s)*" (Richmond-Coggan 2001 pg18). There are various factors which the successful implementation of a contractual incentive scheme depends, there is however a commonality, in that there is "*the need for the clients', consultants' and contractors' objectives to be compatible and remain compatible [...] if in striving to achieve their own objectives, each party is actively assisting the other to similar success, the incentive scheme has a good chance of working well.*" (Richmond-Coggan 2001 pg21).
Whilst the existing evidence suggests that effective use of incentivisation requires the parties full engagement and commitment of resources to bring about the necessary cultural change within the organisation and the project team, as well as adaption of conventional communication skills in favour of more open book methodologies; "*use of partnering concepts can provide the management and operational environment in which to develop this new culture and consider incentivisation proposals but partnering is not necessarily an element within an incentive scheme*" (Richmond-Coggan 2001 pg12).

So far we have focussed on the positive aspects of incentivisation and 'best practice' with consideration of constraints to their successful adoption. In order to present a balanced review of the literature it is crucial to seek information surrounding both positive and negative aspects of the subject matter.
Prof. Green on best practice using metaphors to describe organisations states that in a political sense emphasis is placed on "*the role of vested interests in shaping the best practice agenda […] it is not unreasonable to suggest that [the numerous committees that shape the best practice agenda] avoid making recommendations that threaten their vested interests*" (Green 2001).
Green by his own admission "*adopts a critical perspective and deliberately sets out to challenge the accepted conformity"* recognising that existing literature is unlikely to challenge what he describes as the industry 'status quo'. Comparing the '*rhetoric of partnering*' to 'c*orporatist propaganda*' Green states "*Success in partnering is continually linked to 'faith' and 'commitment'. Those who do not conform are labelled as 'adversarial*'". According to Green "*The rhetoric of 'trust and teamwork' ultimately seems to unfold as re-packaged Taylorism. The dominant management philosophy is that of 'command and control'. The agenda for change serves only to preserve the status quo*" (Green 2001).
Clearly Green is motivated to present a damning view of industry culture where facts appear engineered to fit the hypothesis. The relevance of including his paper in the literature review is not

only to ensure that negative aspects of the proposition are considered but to make the reader aware that biases do exist in published material. Whilst not to the same extreme and visible nature, industry and Government publications on best practice and new methodologies must surely share elements of bias as demonstrated by Green.

DESCRIPTION OF SURVEY

A questionnaire was constructed in order to formulate an overview of the construction industry which relates to the research against a background of procurement and the economic environment.
The interviews were tailored to the respondent; both interviews, whilst touching on the same topic area were significantly different, with the aim of gathering information from differing view points, offering greater insight into the matters raised by the questionnaire as well as additional queries organically raised through an ongoing literature review.

SUMMARY OF RESULTS

In the end twenty replies were received; a small but workable sample. Obviously all tentative conclusions have to be qualified keeping the small sample in mind, both from the point of view of formal hypothesis testing and casual (if enlightened) observations.

Analysis of the survey results proceeds along two broad lines. Can we specify and test hypotheses using formal test procedures? Can we examine the results and see if any apparent, or possibly surprising, relationship emerges, even if the sample size does not allow formal acceptance or rejection. In this study the second approach certainly yields some interesting and perhaps surprising results, results that if they were replicated in a larger study with a more credible sample size would be very revealing.

Questions 1 to 5 are largely descriptive, revealing a spread between sectors, contractors, clients, executive decision makers, site managers and operatives.

Question 2(ii) suggests that repair and maintenance does not figure prominently in the operations of the companies involved. Should we be surprised by this? The importance of maintenance contracts in yielding a smoother cash flow until recently seemed very fashionable, particularly as a result of the economic downturn in 2008. Conventional wisdom suggested that companies with a strong maintenance side to its business portfolio would be better placed to withstand the downturn than pure construction companies such as dedicated house builders. However, the dramatic collapses of both Connaught and ROK have led to a re-evaluation of this and perhaps suggests that desperation bidding for maintenance work is equally disastrous as desperation bidding for anything else.

Question 3(i). Unsurprisingly perhaps, suggests that there is a general perception that it is the contractor that shoulders risks.

Question 3(ii) explores procurement routes; “Partnering Frameworks” appear to have some following, although there might be some suspicion here in that there may be an element of 'lip service' if comments from Questions 4 and 5 below are anything to go by.

Question 4 asks what effect the current economic climate has had on the choice of procurement. Here the answers rather emphatically suggest a reversion to more traditional low cost, competitive tendering with more than just a hint of desperation involved. Some individual, but revealing quotes were as follows. “We have to be the lowest price in the marketplace.”, “organisations we previously had partnering agreements with have adopted more traditional/D&B forms of contract tendered competitively.”, “Partnering has conveniently disappeared and clients are preferring competitive tendering often under the guise of partnering.” and “Reverted to competitive tendering.”

Question 5 then asks what form of procurement the respondent would LIKE to see. Here there were a noticeable number stating a preference for traditional and D&B methods, but a much greater number stated preference for partnering agreements. Some pertinent examples include "Increased use of partnering frameworks rather than short term lowest price wins procurement routes", "Partnering agreements to minimise adversarial practices," "Collaborative working as I believe that going for lowest price doesn't give best results." and "Partnering. Provides best value all round."

Question 6 asks about factors which may lead to project failure. The responses are on a scale of 1-5 with 1 = least relevant, and, 5 = most relevant. Six possible factors are included. Each of the factors attracted the maximum of 20 responses. The mean and standard deviations for each factor is presented below:

Factor	Mean	St.dev.
Project Management procedures	3.70	1.031
Project procedures	3.30	0.923
External factors	3.15	1.089
Complications	3.20	1.005
Human factors	3.05	1.099
Incentive scheme adopted	1.60	0.754

Table 1: Question 6 results, Failures.

What immediately presents itself from the above is how there is very little variation in the perceived importance of the first five factors. However, the final factor, "No Incentive Scheme Adopted" is quite markedly out of line with the others, with the calculated standard deviation suggesting that incentive schemes are not a significant factor in project failure. We will return to this in detail later as it will form an important part of the discussion.

Question 7 follows on directly from Question 6 by asking what factors may be most responsible for a project's success. The categories are the same as in Question 6 so as to facilitate a direct comparison. Again the means and standard deviation of each factor are presented below:

Factor	Mean	St.dev.
Project Management procedures	4.20	0.696
Project procedures	3.55	1.099
External factors	2.85	1.226
Complications	3.15	1.182
Human factors	3.45	1.099
Incentive scheme adopted	2.45	1.234

Table 2: Question 7 results, Successes.

Here the results show that perceptions of factors relating to success make wider distinction between the possible causes. The incentive scheme adoption is regarded as noticeably less important, rather the same way that it was given less blame for failure, as noted in the results for Question 6. Again, we will return to this in the later discussion.

Questions 8 to 12 asked a series of questions directly relating to the management and use of incentive schemes, the results were unrevealing.

Questions 13(i) and 13(ii) asks if the company concerned offers an incentive to working such as employee ownership and/or performance related pay and if so what form do these incentives take. Half the firms responding said yes. These took various forms with bonus schemes and profit related pay dominating. One notable departure was Lindim's replay outlining the company's share ownership scheme.

Question 14(i) and 14(ii) ask what respondents' personal experiences have been about performance related pay.   Most responses were neutral (opting for ‘3’ on a scale of 1-5), outnumbering positive responses 9 to 5. Interestingly, perhaps, negative respondents were only 1.

Question 15(i) asks if a strategy of employee ownership would encourage site employees to be more economically responsible. The responses were fairly amorphous with only 5 out of 16 saying yes and 8 out of 16 replying with a resounding “Depends on the individual.”

Question 15(ii) asks for elucidation on 15(i). The main response of note is Lindum's lengthy reply that it works for them.

Question 16 asks client organisations or consultancies if they urge contractors to partner with subcontractors. The answers were not illuminating with 16 out of twenty settling for “other.”

Question 17 asks if the respondents actually have any experience at working under an incentivised scheme.

Question 18 asks the seven “yes” respondents from Question 17 to rank the effects that working under an incentive scheme would commonly have relative to non-incentivised working arrangements on a scale of 1 (little effect) to 5 (great effect.) The means and standard deviations are presented below:

Factor	Mean	St.dev.
Completion Time	3.86	0.690
Cost	4.28	0.756
Quality	3.71	1.110
Number of Disputes	3.00	1.000
Client-Contractor Communication	3.14	0.899
Client-Contractor Relations	3.14	1.069
Supply Chain Management	2.57	1.134

Table 3: Question 18 results, effect of incentive scheme on project.

Here we get the striking result that those respondents who have actually operated under an incentive scheme strongly suggest (with consideration of the sample size) that they actually think incentivised schemes have a positive effect on time, cost and quality in practice.

This does run contrary to the respondents more general views as expressed in the responses to Questions 6 and 7 that incentive schemes have little role to play in either the success or the failure of specific projects. This works to the findings of the literature review that suggested that the construction industry has a conservative mind-set with ingrained reluctance to adopt new practices. Those who have experience of new practices have different perceptions of their contribution.

DISCUSSION

The role of the Lindum's response in both the questionnaire and their interview can not be underestimated. They are a very strong supporter of employee share ownership as an incentive to best practice to a degree bordering on evangelism, and it is very easy to be taken in by their enthusiasm. Any interested party wanting to promote incentivised schemes will likely want to make use of the Lindum experience as supporting evidence. Certainly Lindum's results have been impressive particularly with regard to maintaining profitability during the deep recession that the construction industry has experienced since 2008. On the other hand could it be that Lindum's relative success may be due to it simply being very effective at getting its contract pricing right and chasing profit and not just “buying” unprofitable turnover through desperation pricing, as typified by the disastrous examples of ROK and Connaught. It's entirely plausible that Lindum's success might not actually be directly the result of its employee ownership structure, but rather simply be due to its operating competence. Employee share ownership may not actually even be a necessary condition for success, much less a sufficient condition. As hinted by Warren in his questionnaire response "*employee engagement isn't just down to one thing, it is an entire culture of freedom to work, flexibility, profit sharing, share ownership, flat management structure, informality and strong leadership throughout the business*".

Does the questionnaire give us any interesting clues? Question 3 in the questionnaire suggested that traditional procurement routes are dominating in today's recessed economics climate. We noted some quite emphatic quotes emphasising the apparent reversion to traditional procurement routes. There appeared to be some support for partnering frameworks (although less than traditional and D&B). However, the quote of respondent that “*Partnering has conveniently disappeared and clients are preferring competitive tendering, often under the guise of partnering*” might well suggest that this result is overstated.

Question 6 attempted to identify factors leading to project failure. Of these only one factor had any statistical significance. This was that the incentive scheme adopted was regarded as unimportant. All other factors were regarded as neither important nor unimportant.

Question 7 attempted to identify factors that led to project success. The only significant factor was project management procedures. This was significantly positive. All the other factors were regarded as neither important nor unimportant.

From the responses to Questions 6 and 7 a distinct suggestion emerges that adoption of incentive schemes has little impact on either the success or failure of a project. If we left the story here it would be easy to conclude that the general, overall industry view is that incentive schemes are not important for explaining either project outcome.

If we move on to Question 17 we note that we have a small sample of individuals who have actually worked under an incentivised contract. Question 18 then asked this sample if the incentivised contract in question had any effect on their actual experience. The responses were quite striking (see figure 1). When asked what the effect of the incentivised contract had on the time of completion, the result was positive with a mean of 3.85 (out of 5) with standard deviation of 0.69. When asked about the effect on cost the response was even more favourable. The mean was 4.28 (out of 5.0) with standard deviation of 0.756. When asked about the effect on the “quality” of the project the mean was 3.71 (out of 5) with standard deviation of 1.11.

It is noticeable that the results from "perceptions on effectiveness of applying incentives" as found by Tang et al. in their 2008 entry into the Journal of Construction Engineering and Management entitled "Incentives in the Chinese Construction Industry" agree with the results from this small sample. This set of responses, those from individuals directly at the sharp end, would seem to be directly contradictory to the more general overview that the responses to Questions 6 and 7 appear to suggest.

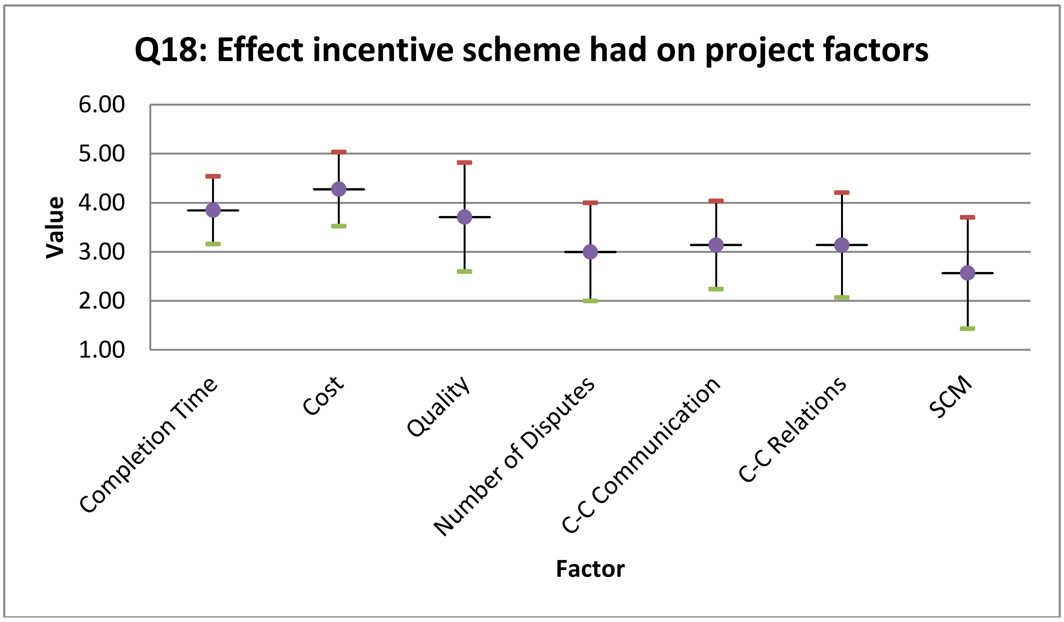

Figure 2: Results from Question 18 (mean +/- 1 s.d.)

Figure 3 demonstrates the difference of opinions when the means of the responses are calculated and compared directly on the same chart. Clearly there is a significant difference between the general view of the respondents and the view of those who have been directly involved in a contractually incentivised construction project.

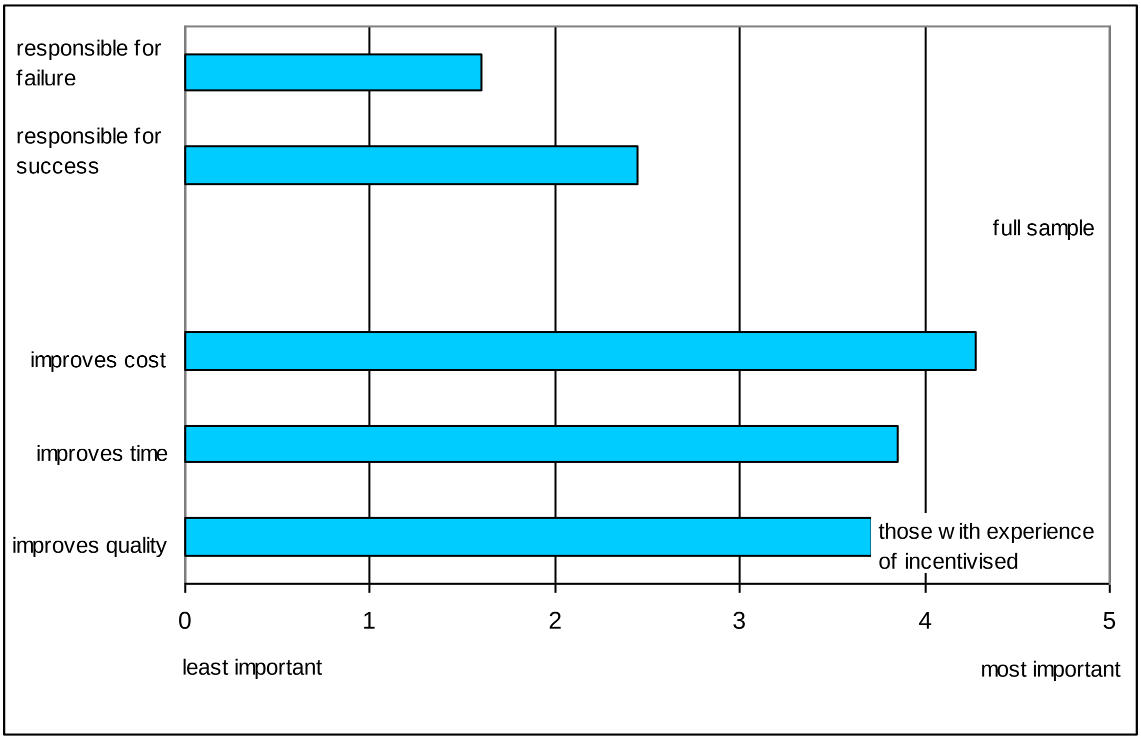

Figure 3: Differing perceptions, the value of incentivised contracts

Incentivised contracts do seem to work according to those on the front line who actually have experience with them.

We now look to the interviews conducted. Here we are trying to draw out more qualitative evidence, given that the opinions expressed are bound to have some personal element.

The first interview was with the General manager of Lindum group. His reply to the first two questions was to detail the working of Lindum's employee share ownership scheme. In the third question the role of maintenance contracts is dealt with by replying that they can not form an important part of the business model of Lindum both because of its uncertainty and the lack of profitability. This is followed up by Question 4 which considers the collapses of ROK and Connaught. The reply here was based around “turnover = vanity and profit = sanity,” Lindum had previously had some (very informal) contact with ROK and found some of their ideas interesting and thought ROK “operated some very effective systems.” However, turnover growth appeared as the Holy Grail, which was fine in good times but disastrous when recession hit. In Question 5 a broader question of employee enfranchisement beyond the share ownership scheme emerged with a quite impassioned description of how Lindum regards its work force as a central asset, e.g. “*Companies with engaged employees with a vested interest in our success must stand a better chance.*” The final question asked if more general acceptance of incentive schemes and employee ownership schemes across the construction industry in general was contingent upon an improving economy? “*Good question!*” was the reply. However, there was an explanation that given the visibility their share ownership scheme gives into the “*workings, performance and objectives for the business*” it has to be a good idea.

All in all, this was quite a detailed response. Interestingly perhaps, was the assertion that the employee share ownership scheme was an important part, but only a part of their overall philosophy of viewing employees as assets whose motivation works to everyone's interest.

The second interview was with an experienced site manager working for Simons Group. Given the different nature of his activity not all the questions were the same as the Lindum interview. The first question considered whether Simons had a strategy for withstanding the recession. The reply was yes it did, saying that based on Simon's lack of debt the main focus was streamlining measures, noting that employees were “kept informed” regularly of all decisions. The second question concerned how dealings with management were being affected by the recession. The reply here suggested it was important as the company had been subject to “streamlining.” The third and fourth questions asked if any incentive schemes would be useful. Here the reply simply said “we already champion such schemes,” and that there were no bonus schemes. Question 5 asked if management was receptive to employee suggestion for improvements in working practices. Interestingly the response was “rarely.” Questions on ROK and Connaught and on the worth of maintenance contracts elicited a similar response to Lindum. That is ROK and Connaught grew quickly at the expense of profitability and could not withstand the recession. Similarly, maintenance contracts are unprofitable.

This second interview could be thought of as reflecting a more traditional type of contracting firm. Although rather more cautious and restrained in its response, the lack of employee enfranchisement compared to Lindum did rather peek through. The one word reply of “rarely” to the question of management receptiveness to employee suggestions is revealing.

CONCLUSION OF THE PRIMARY RESEARCH

The sample size for both the questionnaires and interviews was restrictive, in terms of formal testing; however given this limitation some interesting conclusions did emerge, conclusions which are reinforced by the findings of the literature review and both parts of the survey.

CONCLUSION

The object of this research has been to determine whether incentive schemes such as employee ownership or incentivised contracts can work to the mutual benefit of all participants to a project. We have used survey data and interviews to try and either confirm or deny the views emerging from the recent literature as expressed in the literature review. Official publications such as the Latham and Egan reports were quite unequivocal that incentivisation formed a central pillar of progressive “best practice” procedure for firms to follow. It was noted that this “grandiose” conclusion might represent the most appropriate answer for their particular agenda, quite regardless of reality. Participants in the industry itself may suggest otherwise, particularly as the onset of the recession has panicked many construction firms and moreover their clients 'seeking a bargain' to revert to adversarial pricing and contract tendering in order to generate enough cash flow to merely survive let alone be seen as shining examples of “best practice” techniques. The experiences of ROK and Connaught have shaken previously fashionable views about turnover growth and maintenance elements as drivers of growth in the construction industry. It would be very easy to conclude that the whole question of incentivisation has, for the time being, been consigned to the back burner.

There are, however, some notable exceptions to the cynical notion that when push comes to shove the good, old fashioned adversarial contracting will win the day and the construction industry will remain in its traditional lowest tender setting. The presence of Lindum has been of great importance in this discussion. They strongly support their employee ownership programme as an essential part of their employee enfranchisement philosophy. As even Lindum says, however, both in their survey response and their interview, it is only one such part. For Lindum, employee enfranchisement has been associated with conspicuous success, with maintained profitability in the face of recession. Again, a cynic would say the reason why Lindum is a success is because it is simply very competent at what it does. It could also well be that a wider adoption of a Lindum style philosophy will require an improving economy before more general acceptance by the industry occurs.

The fact that individuals who have worked under incentivised contracts believe from experience that incentives work in regard to improving the time, cost and quality components of projects completed. This is despite the fact that an “overall” view placed little importance on incentivised contracts in explaining either the success or failure of construction projects. The logical consequence would be that serious consideration of incentivisation should be on the industry's main agenda. The different perceptions surrounding incentive schemes (based on experience) does still suggest an industry that is rather backward in adopting new strategies, either because of the nature of the business itself or as a reflection of the desperate state the industry currently finds itself in as a result of the present recession.

Whether or not incentivisation is right for a particular construction project may well depend on a set of individual circumstances. However, there seems enough suggestion here that incentive schemes work and that any company dismissing them out of hand would face a lost opportunity.

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HOW IS GROWTH OR DECLINE IN THE ECONOMY REFLECTED IN RENTAL NEGOTIATION OUTCOMES IN PRIME AND SECONDARY RETAIL LOCATIONS IN THE NORTH OF ENGLAND?

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ABSTRACT

This study investigates whether any of four economic performance indicators have any effect, positive or negative, on the outcome of rent review or lease renewal negotiations in the period 1990-2010.

The details of 152 rental negotiations, exclusively in retail units and exclusively located in the North of England, were recorded with the key performance indicator of negotiation outcomes being uplift on the previous rent. These were then grouped and averaged by year before being compared against GDP, Inflation, Unemployment and Interest Rates to ascertain whether a relationship existed.

The results showed only one statistically significant relationship which was between the Sample Data and Unemployment. This result showed that, in general, as Unemployment falls so the average uplift per annum increases.

Keywords: Negotiation, Rent, Lease, Economics

INTRODUCTION

In 2008 there was a global economic downturn. This is now widely accepted to have been caused by excessive lending and risk taking but first manifested itself in the US housing property market where so called toxic loans defaulted and the effects rippled up through the complex chains of ownership to major financial institutions. The 15th of September 2008 is seen by many to be a ‘line in the sand’ at which the current recession began – this was the date Lehman Brothers filed for Chapter 11 Bankruptcy in the United States although the initial cause can be seen to be the collapse of the sub-prime mortgage market in the United States.

It is not however the intention of this paper to explain or consider why the UK (or global) economy has moved from growth to recession over the past 30 or so years. The focus will be on the effect such

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changes in the state of the economy have on the high street property market. By comparing uplift data gathered from a firm of Chartered Surveyors in Leeds comparisons to economic indicators will be possible.
Until the 1990s the relationship between Landlord and Tenant was rather distant and sometimes confrontational. The vast majority of leases were governed by the Landlord and Tenant Act (1954) and Landlords seem to have held more power with long (20-25 year) leases with 5 year upward only rent reviews the industry standard. This seems to have changed during the recession in the 1990's although there is still a fundamental disparity between the requirements of Landlord and Tenant.
The dataset in this study is derived from the outcome of 152 rental and lease negotiations from 1990 to the present day. The negotiations have been carried out from the perspective of both Landlord and Tenant with one surveyor handling all negotiations. This provides a consistent variable in the data. The data gathered will be compared individually against each of four pre-selected benchmarks - GDP, Interest Rate, Unemployment and Inflation. By creating 4 sets of bivariate data Spearman's Rank Coefficient can be used to ascertain whether there is a mathematically sound relationship between the datasets. From a qualitative perspective, data around incentives offered or prohibitive Lease clauses will be gathered. This will enable more of a narrative around what is offered, to who and when.

LITERATURE REVIEW

A number of papers have been written examining how the relationship between landlord and tenant changes in reaction to fluctuations in the performance of the economy.
In considering the literature available it was important to address a number of areas key to the success of this study. These can be summarised as:

- The historical relationship between landlord and tenant
- How and when this changes
- What comparative data/benchmarks were used
- Findings
- Previous issues & limitations

The Historical Relationship Between Landlord and Tenant

In French & Salisbury's 2010 paper "Implications of the change in user preferences in the economic downturn on investment strategies" they note that up until the recession of the 1980's landlords had the upper hand in lease negotiations. Twenty to twenty five year leases with 5 year upward only rent reviews were the industry norm. Following the recession in the 1980's the authors note that there was a shift in attitude of some landlords who now had to offer concessions to either retain existing tenants or attract new ones to their properties. This shift was further driven by the general business ethos in the 90's that the ability to change quickly was key, thereby creating a need for shorter leases.
A key point the authors make is the way in which investors/landlords protected their investments. They achieved this by placing greater emphasis on the quality of covenant that the tenant provided. The rationale behind this appeared to be that better covenants would be more likely to stay in the property for an extended period of time. The authors do acknowledge that the strength of covenant approach is not foolproof as it has been undermined by the recent property slump in which a number of household names have entered into administration, e.g. Woolworths, Habitat.
More recently the Landlord and Tenant relationship appears to have suffered more due to adverse economic conditions and Tenants simply being unable to pay their rent. In the Estates Gazette article *Yorkshire & the Humber: letting the lettings fly* the author states "by the end of the second quarter of 2010, Yorkshire had the highest regional availability ratio in the UK at 14%. The proportion of Grade A space remained worryingly high at 37%, against a national average of 25%."
How and When the Relationship Changes
French & Salisbury found that since around 2008 all respondents were more willing to negotiate. From the landlords' standpoint their motivation was simply a requirement for a longer, assured cash flow due to the banks' reticence to lend. This liquidity requirement has in turn led to an increased willingness to grant rent free periods, generous repair covenants and amendment of payment schedules (and lower rents). Landlords also appear to have been more willing to waive rent to companies in trouble as the property is simply harder to re-let in the current market.

From the tenants' perspective the authors found that tenants were keen to rationalise their property portfolios and were therefore exercising breaks in leases more regularly.

The observations in the 2002 Code of Leasing Practices (Crosby, Hughes and Murdoch) were somewhat limited to the impact of previous codes of practice. However, the authors do note that "There has been a continuing fall in the average lease length of the better quality property that makes up the IPD databank since the end of the first code monitoring period in 1998" (p. 9).

What comparative data/benchmarks were used?

The 1999 Government Report "A Century of Change: Trends in UK Statistics" tracks the performance of Unemployment, Inflation and GDP from the year 1900 to 2000. The report observed that the twentieth century was, in general, one of growth for the UK. This will provide an excellent dataset against which to compare the findings of this study.

The 2002 Code of Practice (Crosby et al) provides an excellent set of benchmarks against which the primary data can be set for comparative purposes. It was written at a time when economic growth was steady and about to enter into a period of rapid growth. The report was government commissioned but this does not appear to have caused any bias with the results.

Findings

Crosby et al's report was very much focused on the impact on the 2002 Code of Practice for Commercial Leases. Therefore, the findings are very much focused on certain key performance indicators (KPIs) used to measure the Code's effectiveness. Amongst other things the study found that from 1998-2003 average lease lengths fell with the shortest leases being in Yorkshire and Humberside, that there is evidence of increasing numbers of leases with no upward only rent reviews & Tenant's break clauses, and significant numbers of new leases are now contracted out of the 1954 Landlord and Tenant Act – perhaps as high as 40%.

French & Salisbury found that Landlords have grown to be increasingly open to negotiations since the onset of the recent downturn in 2008. They acknowledge the role risk has to play in investor's hesitancy to invest but propose that the provision of flexible leases can mitigate this for all parties. (French & Salisbury, p. 472-3)

Taking more of an international viewpoint, Giussani, Hsia & Tsolacos found that a growing number of European cities are becoming more and more attractive as investment locations. Therefore, they envisage that an international property portfolio is likely to become more normal for Landlord and Tenant alike. As such, the effect that this would have on an international property location such as London should not be discounted.

Previous issues & limitations

Although the papers differ in their findings they are all consistent in citing poor quality data as a limitation of their studies. In their 2007 study, Giussani et al noted that previous studies had cited the same problems in availability of reliable UK investment property data including Morrell (1991) and Currie & Scott (1991). They write that the relatively small number of transactions combined with "the location and property-specific nature of the market" (Giussani et al, p161) are the most common causes of poor data quality.

Similarly, the Government paper "Monitoring the 2002 Code of Practice for Commercial Leases" found a number of issues in their approach to gathering data and their subsequent analysis of it. They cite a number of issues with their underlying data. For example, the paper acknowledges the subjective nature of valuation and how it may skew results "[their data relies] in part on the assumptions being used by the valuer in each case." (p. 324).

METHODOLOGY

The data was gathered from the files of a private practice of Chartered Surveyors in Leeds, established in 1989. The properties are predominantly in UK Northern towns and cities normally on or just off prime pitch, all tenancies were/are for units servicing the baking and gaming industries. The data itself is historic and longitudinal in nature, dating back to 1990. The trigger to gather any data was the occurrence of a lease renewal/re-assignment or a rent review.

The only calculations required were the uplift in monetary terms following review/renewal/assignment and the associated percentage uplift for the deal. This was calculated by :

Monetary Uplift = Final Position – Start Position

Percentage Uplift = Monetary Uplift / Start Position

The external benchmarks selected against which to set this paper's data set are GDP, Inflation, Unemployment and Interest Rates. Due to the manner in which these are available an average annual figure has been taken.

This study has a consistent variable present in all negotiations – the same surveyor has been involved in every transaction. Therefore, any superiority or deficiency in any of the skills a surveyor requires will be consistent throughout the dataset thereby nullifying its effect.

Although both clients are seen as relatively good covenants neither commands the power of a major high street multiple, e.g. M & S. Therefore, there is no expectation of seeing excessively favourable terms given to any of the properties in question (often given in an attempt to attract a good anchor to an area).

ANALYSIS

A total of 152 rent review/lease renewal negotiation outcomes were included in this study. Of these 17 were Lease Renewals and 135 were Rent Reviews. The surveyor who conducted all negotiations acted on behalf of the Landlord 58 times and on behalf of the Tenant on 94 occasions.

As considered in the Literature Review and Methodology there are a number of widely accepted indicators of economic performance that have been used in similar studies in the past. The ones selected for this study were :

- GDP (Growth)
- Unemployment
- Inflation
- Interest Rates

The availability of raw data and relatively low numbers of deals that can be considered, have resulted in annual comparisons of datasets. Therefore, average annual figures for Inflation, GDP, Interest Rates and Unemployment have been calculated from publicly available, government datasets. A comparison of quarterly figures would have allowed for a more varied statistical analysis and ultimately a more robust dataset. However, simply due to the limited dataset available this has not been possible.

Before each indicator is compared against the sample data it is first desirable to examine the frequency distribution of the dataset. Due to the manner in which the data has been collected it is possible to be able to examine the frequency distribution from two perspectives : that of the surveyor when acting for the Landlord and when acting for the Tenant. By completing this exercise it will be possible to ascertain whether there is any significant bias in these sub data sets which will influence the later analysis of relationships between datasets.

Standard Deviation

In calculating the Standard Deviation of the dataset it was first necessary to group the data items. This was done simply in increments of 5% and the number of occurrences from the dataset that fell within the range was then recorded. The results are illustrated in Figure 1.

The mean uplift on all properties across the period was 12.03% with a Standard Deviation of 19.74. Clearly not uniform, the SD curve is positively skewed with 2/3 of results lying between an uplift of 31.7% and -7.17%. This immediately indicates that the majority of negotiations end in either a slight reduction in rent or a modest (occasionally substantial) increase.

A Median uplift of 7.69% is recorded with a Mode of 0 (occurring 35 times). The latter finding is unsurprising. Given the almost infinite number of uplift changes that could occur it would be surprising if two matched unless rounding was involved. Therefore, this analytical measure can be largely discounted in this context.

The distribution graph peaks at 0% (the graph is slightly misleading and shows the value slightly to the left of the Y Axis). This can be explained largely by the fact that the majority of reviews are on 'Upwards Only' terms. Therefore, in times of recession the Tenant will be bound to have no reduction

in their annual rent therefore the best that they can achieve is 0%. If this provision were not in place it is likely that the numbers of properties experiencing negative uplift would increase.
There is also, as one would expect, a downward sloping curve after zero – the higher the uplift the fewer properties. There is one exception, at the 20% uplift mark. Further inspection of the data does not present any obvious explanations for this anomaly and more investigation would be required.

Standard Deviation of the Dataset When Acting for Landlord

As can be seen in Figure 2, the positive skew seen in the data as a whole is also seen strongly in this sub-dataset. The mean is, surprisingly, exactly the same as for the whole dataset at 12.03% (this figure has been double and triple checked as the researcher was dubious as to the validity of this result initially).
As with Figure 1 there is an erroneous rise in the number of properties enjoying an uplift of 20-25% with a similar peak at 0, again presumably explained at least in part by lease provisions.

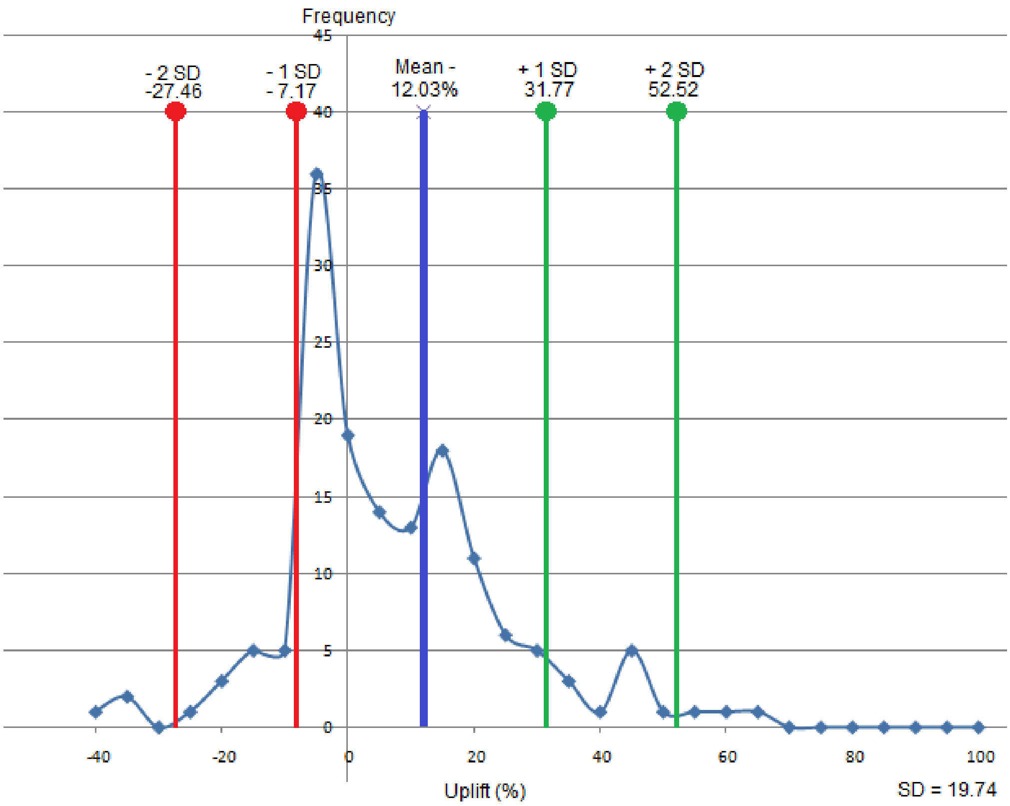

Figure 1 - Standard Deviation of Dataset (whole dataset)

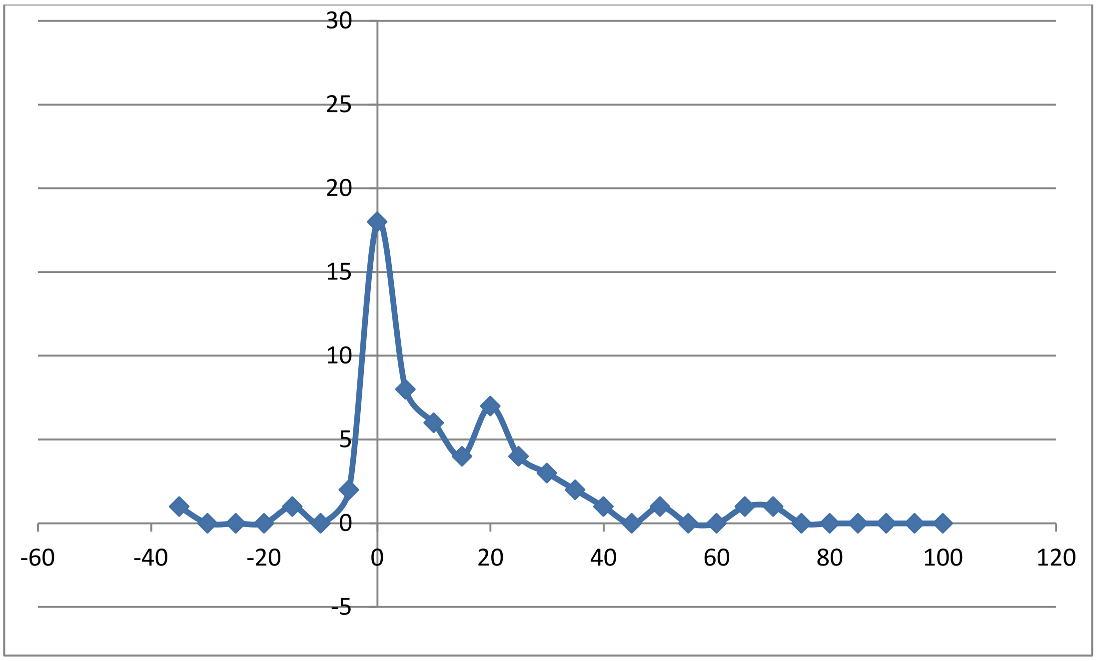

Figure 2 - Standard Deviation of Landlord Side Dataset

The mode is again 0% with 17 occurrences whilst the median is slightly higher at 8.05%.

Standard Deviation of the Dataset When Acting for Tenant

As can be seen in Figure 3, the positive skew seen in the data and with the landlord side data is also seen strongly in this data subset. The mean, at 7.56% is lower than that for the data as a whole and for when the surveyor was acting with the Landlords interests. This suggests that the surveyor's skills have had an effect in protecting his clients' interests over the study period. The modest 7.56% average uplift is 4.47% lower than the 12.03% average when acting for the landlord.

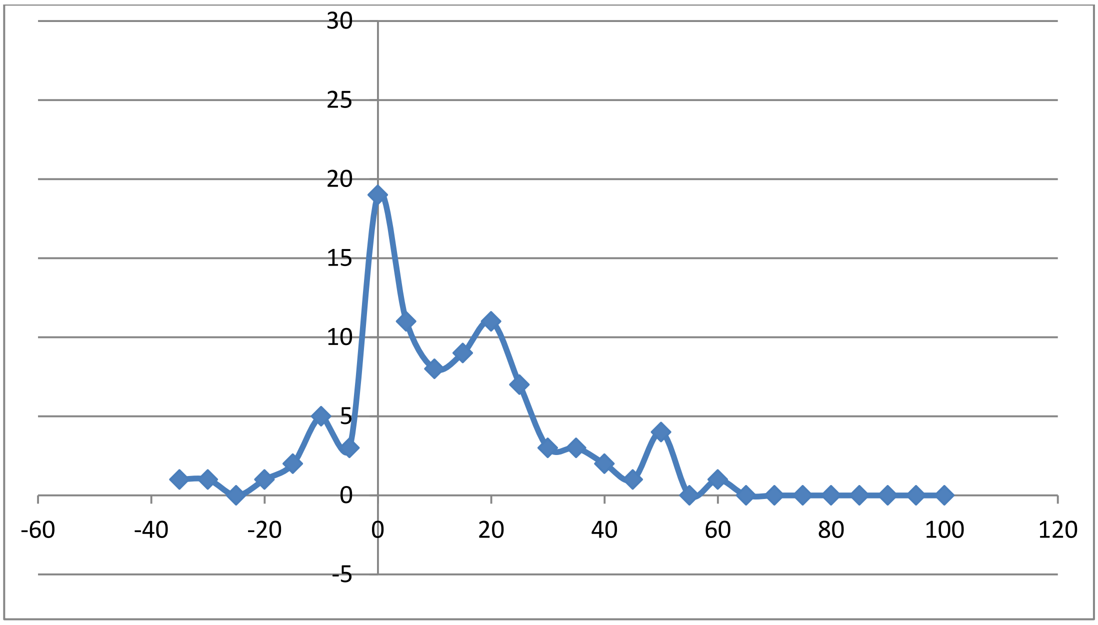

Figure 3 - Standard Deviation of Tenant Side Dataset

The shape of the distribution curve is still a positive skew but less pronounced as with the previous two data distribution graphs. The SD for this dataset is far lower at 3.45, the reason for this can be seen represented in the graph.

Summary of Standard Deviation & Data Distribution

The behaviour of the data in the two subsets examined can be seen to largely mirror that of the dataset as a whole. All graphs are positively skewed with concentrations around the 0% uplift level. As such it can be seen that the capacity in which the surveyor acted in during negotiations is unlikely to unduly influence the analysis in the following sections.

Sample Data v GDP Growth

Examining the average uplift per annum and GDP growth over the past twenty years produces a graph which, on initial inspection, shows a somewhat limited relationship between the sample data and GDP growth rates (Figure 4).

The period 1991 to 1994 saw consistent falls in the growth levels of GDP – a time the UK was widely accepted to be in recession. There was not a fall in the sample data performance until 1993 when it dropped steadily to a rate of 4.84% in 1995 before a jump to 11.36% in 1996. This would seem to suggest a lag of 2 years before the drop in GDP began to affect the sample properties.

1995-2000 saw successive and consistent drops in the rate at which GDP grew. Conversely, the average uplift per annum for the sample data showed steady growth from 1997 over the same period. A lag in the performance of the relative variables can be observed although this time it is inverse to the original relationship observed with the performance of GDP pre dated by a fall in the performance of the sample data.

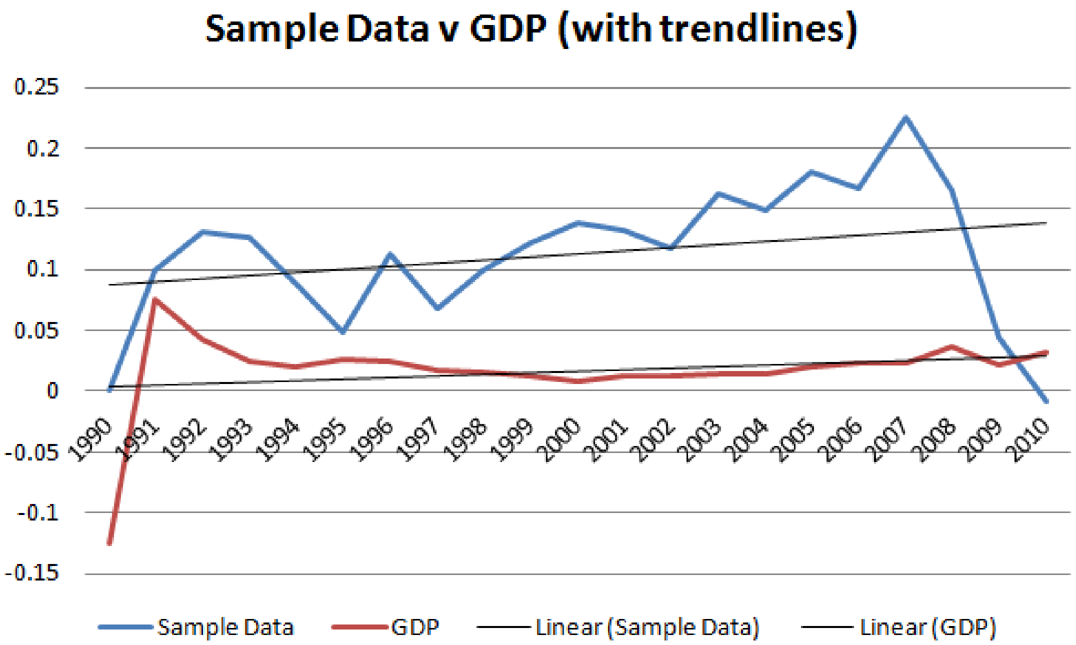

Figure 4 - Sample Data vs.GDP with trendline

By adding a trendline (in black on Figure 4) to both datasets it is clear that there is an upward trend in values for both datasets (See Figure 4). This observation should be treated with caution and it is likely that both datasets are being influenced by an external factor which is influencing both (a causality). In this context the causality is most likely to be an economic factor with inflation a likely culprit.

Sample Data v GDP – Comment

It is generally accepted that the higher the GDP the more successful an economy is. However, it is quite a leap to take a position that this would automatically translate into higher property returns. It is far more likely that there are other factors at play unique to the properties in question.

The question of locality is one that has a repeated effect on all of the analysis carried out in this study. To save repetition it will only be considered in this section.

The uniqueness of a property is generated from the condition of the property itself, the neighbouring properties and its actual geographic location. Combined with different populations and demographics each property has a different potential as a retail unit and therefore a different achievable rent. These factors are dynamic and change in importance and influence over time. Given the size of the sample data it is likely that the location of the properties, and thus their "uniqueness", has had a sizeable effect on the outcome of the study.

With the matter of locality dealt with there are still two outstanding patterns in the datasets which do indicate some sort of relationship. In the two major recessions over the last 20 years both the sample data and GDP growth rates fell significantly, although there was a lag on each occasion which was inverted in 2008. This does point to the fact that GDP is influencing the Sample Data in a negative fashion but it would appear that only an extreme economic event precipitates such a response.

The Spearman's Rank Coefficient, when calculated, does not provide any statistically meaningful relationship between the two datasets (See Appendix C for calculations). A value of -0.04 indicates a very weak negative, inverse relationship between the two variables and is irrelevant as the measure does not pass the statistically significant threshold of 0.380 for a sample size of 20.

Sample Data v Inflation

Aside from the period 1990-1992 the UK has enjoyed a very low inflation rate although at the time this report was written (Q3, 2011) it would appear to be rising again.

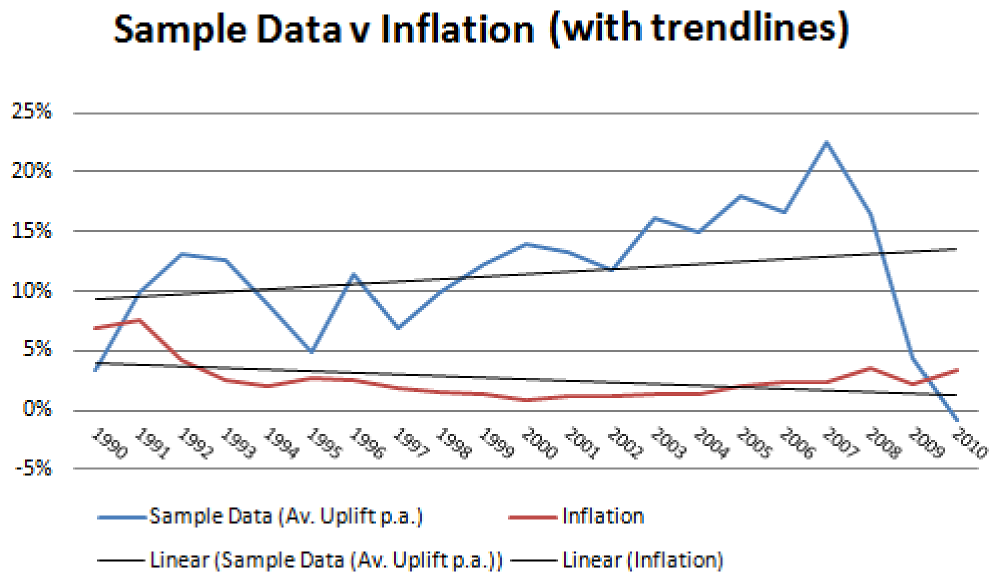

Figure 5 - Sample Data vs.Inflation with trendlines

The sample data shows a general trend of increasing average uplifts per annum from the period 1996 to 2008. This is erratic but clearly observable behaviour in the dataset which seems to continue regardless of the level of inflation over the period.

The only occasion where there could be argued to be a clear relationship are the two recessions of the early nineties and the more recent recession beginning in 2008. By adding trendlines to the datasets there is a observable inverse relationship between the two datasets (see Figure 5). However, this observation must be treated with caution for a number of reasons.

The sample data moves up and down during what may be termed ‘normal economic conditions’ from 1992 to 2008 with inflation seeming to have little or no effect on its movements. This is likely to be due to factors such as locality having a more pronounced effect on rental incomes over these quieter economic periods. It is only during big economic ‘events’ such as the recessions that a clear relationship manifests itself and even this is relatively short lived. However, the effect of Inflation alone on the sample data is almost impossible to isolate. During these times a myriad of other factors will undoubtedly also have had an effect on the decline in the sample data’s figures, it was not in the scope of this study to identify or consider these.

The Spearman’s Rank Coefficient does not provide any statistically meaningful relationship between the two datasets. A value of -0.28 indicates a weak negative relationship between the two variables (as per the trendlines shown in Figure 5). Once again, this is rather irrelevant as the measure does not pass the statistically significant threshold of 0.380 for a sample size of 20.

Sample Data v Inflation – Comment

The effects of inflation on the economy as a whole are well documented. Historically the relationship has been somewhat erratic, as Johnson, Davies & Shapiro noted “If Inflation is measured as the increase in the retail price index then the growth in rents of many types of property has sometimes been in excess of inflation and sometimes behind it” (Johnson et al, p190). As seen, the data in this study generally behaves in a similar manner – a fact backed up by the Spearman’s Rank score – and thus seems to be an area that is already perhaps worthy of further study.

Inflation is continuous throughout the study period albeit at different levels. Therefore, an apparent reduction in inflation on the graph, whilst a drop, is in fact only a lower level of inflation – not deflation. This in turn pushes rents up consistently over the study period. At the onset of the 2008 recession and in the early nineties average annual uplift (sample data) and inflation rates both fell sharply. It is likely that is was not Inflation alone that was the cause of these dips in the sample data. Other economic factors associated with a recession are likely to have combined to exaggerate the effect and produce two, albeit brief, periods when the sample data and inflation figures seem to enjoy a relatively close relationship. Landlords wishing to retain cash flow and secure their investments will have led/do lead to favourable terms for tenant’s in times of economic downturn. Whilst indirectly caused by inflation it is not inflation alone which motivates the landlords to act in this manner – more the overall economic picture during slumps.

An area worthy of future study would be to compare inflation/purchasing power over time against the sample data but set against a base year index. This will give a more accurate picture of the change in value of money over the study period. It would be reasonable to expect an inverse relationship between the two, i.e. as purchasing power drops so rent increases. The author acknowledges that the manner in which inflation data was considered, i.e. annual & only in comparison to the previous year, may have given a ‘false negative’ and to dismiss any relationship between Inflation and the sample data at this stage would be unwise.

Sample Data v Unemployment

Since the peak of 10.4% in 1993 unemployment steadily fell to reach a low of 4.8% in 2004. Over the same period the sample data grew from a low of 4.84% in 1995 to an average annual uplift of 22.52% in 2007. This immediately suggests an inverse relationship – the lower the unemployment rate the higher the average attainable uplift in rent reviews or lease renewals. A graphical representation of this can be seen in Figure 6. The visual impact of this relationship is diminished by the relatively small drops unemployment experienced annually compared to the relatively volatile changes, and values of, the sample data.

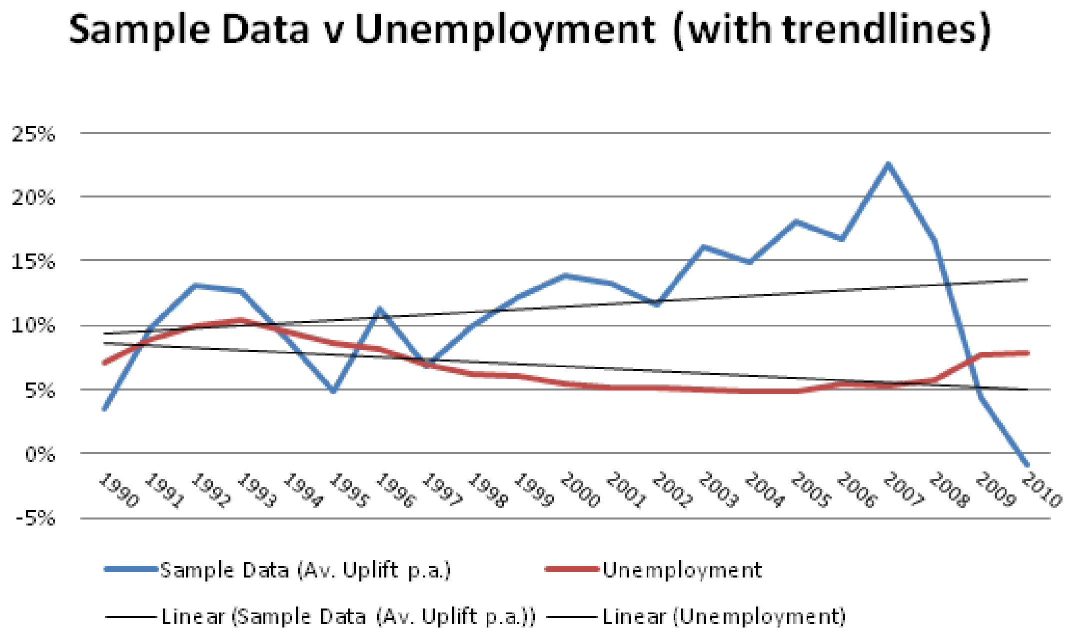

Figure 6 - Sample Data vs.Unemployment (with trendlines)

By adding trendlines to the datasets there is a clearly observable inverse relationship between the two datasets (see Figure 6).
A Spearman's Rank Coefficient would appear on this occasion to provide a statistically meaningful relationship between the two datasets. A value of -0.61 indicates a "medium negative correlation" (Collis, p 239) between the two variables. This is further reinforced by the fact that the measure passes the statistically significant threshold of 0.380 for a sample size of 20. Indeed, the result is so strong as to pass the level of insignificance for a one tailed test at a confidence level of 0.005.
Therefore, it would seem on this occasion that there is a significant negative relationship between the two variables – when the unemployment levels fall the average uplift in rent review/lease renewal negotiations (as a general rule) increases.

Sample Data v Unemployment

The relationship between the sample data and unemployment would appear at first glance to be straightforward to explain. By there being drops in unemployment there will be more people in work and therefore an increased demand for floor space. This would in turn improve a Landlords position in negotiations as it would be a letting market (provided the local market was not flooded with property). Despite this, the relationship should be treated with some caution. The unemployment figures consider unemployment across all sectors. The sectors in question are only high street units, therefore the whole office and industrial markets are excluded as well as countless others.

Sample Data v Interest Rate

These two datasets initially display a strong negative correlation with the sample data values increasing whilst the interest rate decreasing, this is illustrated in Figure 7. The sample data increases in value almost fourfold in two years, from 3.4% in 1990 to 13.1% in 1992. Conversely, over the same period the interest rate fell sharply from 13.9% in 1990 to 8.4% in 1992.

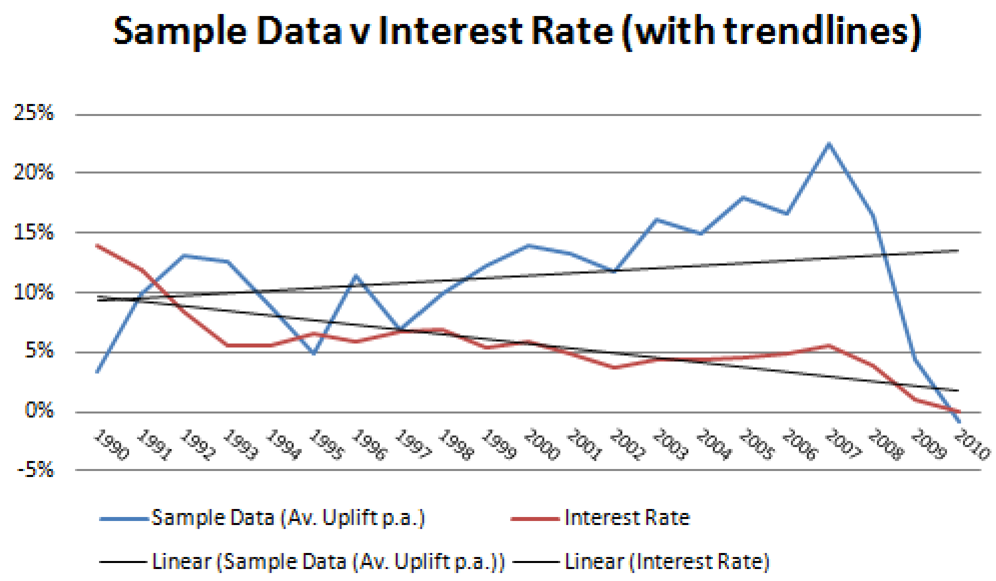

Figure 7 - Sample Data v Interest Rate (with trendlines)

At this point however there is no obvious relationship until the onset of the recent recession in 2008 with steady declines in the sample data figures and Interest Rates. The sample data saw a fall to -.08% in 2010 from a high of 22.5% in 2007. Similarly, the interest rate fell from 5.5% in 2007 to 1% in 2010.

Sample Data v Interest Rates – Comment

The very nature of leases and rent reviews lead to a lag in the relationship between these two variables. As such, it could have been reasonably expected that there was a relationship between the two sets of data.

The apparent relationship between the variables in the early nineties would appear to be an anomaly whilst apparent evidence of a more recent relationship could be said to be tenuous at best. The recent reaction of the Bank of England to cut interest rates was simply in reaction to the worsening financial situation, the fall away in the sample data cannot be attributed to the role of interest rates alone.

The addition of trend lines again shows a visually negative relationship between the two variables. This observation is partially supported by a Spearman’s Rank Coefficient value of -0.25. Again, this figure is rendered somewhat irrelevant as it does not pass the statistically significant threshold of 0.380 for a sample size of 20. Again, no meaningful relationship exists between the interest rate and the average annual uplift for the sample on this statistical test alone.

Areas of Further Research

Two obvious areas of further research are a more in-depth nationwide investigation into the reaction of the gaming and high street baking/fast food industries to fluctuations in the four measures used in this study over the past 20 years.

Again relating to the lease, a study of terms such as rent free periods & repairing covenants would also appear to be worthy of merit. There were not enough leases available in this study to pick out any such notable terms. Such a study would require a large sample size and clear definitions as to what should and should not be recorded – e.g. are lease terms of more favourable to Landlord or Tenant in terms of covenants associated with the lease?

A final area of interest and potential for future research is to determine at what level an incestuous relationship during negotiations affects the outcome. The sample data contained 21 negotiations where the relationship may be said to have been ‘incestuous’. By this it is meant that the landlord is also the tenant, normally for the purposes of growing a pension fund through rental of office space back to oneself.

Limitations

One of the largest limitations in this study was that of the sample size. 152 properties, spread across a large geographic area and across a timespan of 20 years simply did not provide a robust enough set of data to enable meaningful analysis.
All sample properties will have been subject to the micro economic climate of the North of England. With little representation from the South no balance is given to the data set. It has long been acknowledged that there is an economic North/South divide, to give the dataset balance a sample population would ideally have been chosen that represented both.

CONCLUSIONS

The results suggest that aside from Unemployment there are no meaningful relationships between the sample data and other data sets used. This is a medium strong negative relationship which could reasonably have been expected at the start of the project.
Before concluding entirely it is appropriate to take each measure individually and to comment on if & how rental negotiations have been affected by economic factors :

Sample Data v GDP

When GDP fell sharply during the two major recessions of the last 20 years both the sample data and GDP growth rates also fell significantly. Once could expect such a correlation given the importance given to GDP as an indicator of an economy's health. It may be that the effect of GDP on the sample data is only evident during times of extreme and/or unusual changes in GDP and given the failure of Spearman's Rank Coefficient to provide a significant relationship such comment should be treated with caution although not dismissed out of hand.

Sample Data v Inflation

There is no statistically significant relationship present between these two sets of variables. Given the mechanisms available to landlords to protect their interests it is not unsurprising that there is no relationship. Clauses in leases to protect the landlord through the use of RPI are not uncommon and are becoming more frequent in the property industry as time progresses.

Sample Data v Unemployment

The comparison between these datasets does produce a medium negative correlation that is of statistical significance to a level of 99.995% certainty.
By there being drops in unemployment there will be more people in work and therefore an increased demand for floor space. This would in turn improve a Landlords position in negotiations as it would be a letting market (provided the local market was not flooded with property).
Although this seems to make logical economic sense the relationship should be treated with some caution. As stated previously unemployment figures consider unemployment across all sectors. The sectors in question are only high street units, therefore the whole office and industrial markets are excluded as well as countless others.

Sample Data v Interest Rate

When set against each other these two datasets initially display a strong negative correlation. However, from 1992-2008 there is no observable correlation in behaviour of this dataset. This suggests that in times of sudden/extreme change there is an observable relationship between the variables. The sample data seems to respond to strong events in the economy, e.g. recession, which unsurprisingly negatively affect rents. In times when the economy is performing as expected there appears to be little or no relationship between the datasets.
This is partially explained by the very nature of leases and rent reviews and considerable time lags involved in purchasing a property or triggering a rent review/lease renewal, indeed this applies across the board to all of the comparisons made.
Further confirmation that there is no relationship is provided by the failure of Spearman's Rank Coefficient to provide any kind of statistically significant relationship.

Concluding Remarks

To conclude, it would be fair to say that from this study only the Unemployment rate measurably affects rental negotiations by having a negative relationship with it. This observation is reinforced by a statistically significant medium strong negative value of -0.61.

Whilst the other variables – GDP, Interest Rates and Inflation – all do show brief signs of having a relationship (and thus influencing negotiating outcomes) they are only short term observations and should only be used to potentially guide future research.

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USE OF INDUSTRIAL SIMULATION TO FACILITATE WORK BASED SKILLS FOR BUILDING SURVEYING STUDENTS, AN INTRODUCTION TO THE RATIONALE FOR RESEARCH

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ABSTRACT

Research to establish pedagogy for imparting work based skills to students studying higher education courses in building surveying is being undertaken by the author at Sheffield Hallam University. An overview of the work thus far is provided. The pathway undertaken by typical building surveying industry entrants is outlined, along with the need for work based skills to be gained before employment commences. Research is based upon requirements expressed by the four stakeholders to building surveying education, (learner, education provider, employer and professional body). The rationale for provision of work based skills alongside academic learning is established. Use of a modified action research based methodology is proposed and justified, by reference to existing literature and the required research outcomes. Use of an enquiry based learning model using industrial simulation is proposed and justified. Factors influencing successful delivery of industrial simulations and enquiry based learning are identified, and the measures requiring to be addressed within any activity brief in order to prevent learner disadvantage are established.

KEY WORDS: Action Research, Industrial Simulation, Vocational Stakeholders, Scaffolding

INTRODUCTION

Access to a professional surveying career in the UK in the main requires the entrant to gain an accredited degree. This allows entry on to the Royal Institution of Chartered Surveyors (RICS), Assessment of Professional Competence (APC) programme. Completion of this programme then leads to becoming a Chartered Surveyor (MRICS). In the UK the degree would typically be a BSc honours or MSc in a surveying discipline. Some, but not all, students studying the BSc/MSc courses might experience some element of industrial experience before graduation. Graduates ideally go straight to a surveying employer, and embark upon their APC whilst working for that employer. The lead in time between being a student and being required to become a fee earning surveyor can often be short. As with other vocational degree programmes there is a requirement for surveying degrees to meet academic standards in teaching, assessment and programme outcomes. There is however also an employability requirement to provide graduates and placement students with some vocational skills. This allows an employer to charge a fee for their work as they are able to apply the knowledge gained during their studies.

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USE OF ACTION RESEARCH TECHNIQUES

"Action research is the name given to a particular way of researching your own learning. It is a practical way of looking at your practice in order to check whether it is as you feel it should be. If you believe your practice is as it should be you will be able to explain how and why you believe this is the case; you will be able to produce evidence to support your claims. If you feel your practice needs attention in some way you will be able to take action to improve it and then produce evidence to show in which way the practice has improved." (Caniff & Whitehead 2002)

Action Research utilises the action, which in this case is an industrial simulation, to yield improvements and provide data. Thus the action becomes the research tool, (Waters-Adam 2006). A cyclical model of action research is described by (Arhar & Kasten 2001), consisting of 4 separate activities, planning, action, monitoring and reflection. Unlike this quite simplistic model the author also incorporated external data from primary and secondary research in to the reflection and planning stages of this research. This approach is endorsed by Stringer who states the importance of the participation of all of the stakeholders, (Stringer 1996). In this research input from the professional body and employers could only be obtained through separate primary and secondary research. Mcniff notes an important issue with action research is that it can be subject to variables, (Mcniff 1988). The author endeavoured to keep as many constants as possible, however in research which uses data from learner feedback the unavoidable variable was that the learner cohort changed annually.
A further purpose of action research in education is elaborated upon by Nixon, who states that the research is a way of informing other teachers within the specialism of practice improvements, (Nixon 1981), thus encouraging change and improvement to overall practice, (Mills 2003). As an ex-surveying practitioner teaching specialist surveying modules, this was an important factor to the author, as previous research in to teaching specialist building surveying vocational skills is scarce, and a documented pedagogy could inform and improve practice to the benefit of both education and practice.

STAKEHOLDER REQUIREMENTS AND MODULE OUTCOMES

In delivering surveying education the outcomes must satisfy a number of stakeholders. The first stakeholder was the university, who required that the degree in all its parts be delivered to a comparable academic standard to all its other degree programmes, is of a standard comparable with similar degrees offered by other institutions and fully meets the academic and quality regulations it lays down for degree provision. The second was the accrediting body the RICS who lay down regulations governing the content of the courses which they accredit for graduate entry on to the APC process. A third stakeholder was the surveying industry employers as without the realistic prospect of graduate employment vocational surveying courses would face decline. A final stakeholder was the fee paying learners. Module outcomes are generally pre-set, and any industrial simulation based assessment needed to pass both internal and external scrutiny so that it demonstrably met the academic requirements of module and level of study and were presented to students in a way which is consistent, fair and unambiguous, in line with quality regulations.

Advantages of the use of Industrial Simulation

Industrial simulation can be used as part of enquiry based learning strategy as an educational tool. Enquiry based learning, (EBL), is described by the Centre for Excellence in Enquiry Based Learning, as an environment where the process of enquiry is owned by the student. They go on to state that the process involves a scenario being set, supported by a facilitator, which allows students to identify their own issues and questions, (CEEBL 2009). Students would then utilise resources provided for them or sourced by themselves to research the topic. One feature of enquiry based learning is that it might, involve a small scale investigation involving field work and a case study adapted to meet the disciplinary contexts, (CEEBL 2009). Self directed learning as advocated by EBL is believed by many educationalists to be a superior form of vocational training in comparison to traditional teaching. The reasoning being a belief that that things a learner has discovered through experience are more likely to be retained, (Park et al 2003). In EBL the role of the teacher changes to facilitator, (Bradbeer 1996), Learning in the context of building surveying education should ideally include, academic outcomes, technical knowledge and practical vocational skills.

In terms of vocational skills training, industrial simulation exercises can contextualise prior learning in to an industrial context, (Khan & O'Rourke 2004), where it is of value to future employers. It reinforces past learning as the learner can test knowledge against a real life scenario. By using the knowledge to resolve problems the learner is afforded access to a whole new canvas for that knowledge, which gives it a greater value. It introduces the concept that learning is not purely restricted to the classroom or valid only within an educational establishment location. This form of learning would appear ideal when stated outcomes are the embodiment of key vocational skills. The use of a small scale simulated industrial exercise is cited by Khan & O'Rourke as ideal to focus learning directly in to a disciplinary context, (Khan & O'Rourke 2004). Conventional theory would it seems suggest that industrial simulation in the given context could deliver a dual outcome of general academic and specific vocational learning.

DEVELOPING A SUCESSFUL INDUSTRIAL SIMULATION EXERCISE

One danger of such exercises compared with traditional classroom teaching is that they can take students out of their established comfort zones, (CEEBL 2009). Whilst Nunnington views the challenge of this event as being the catalyst for enhanced learning, (Nunnington 2009), it can if handled poorly alienate students and detract from that learning. The student taken in to a challenge situation must therefore be supported. This support sometimes referred to in education text as scaffolding, is an essential factor. It must be visible and easily accessible, but also discreet, (Nunnington 2009). If not it might overshadow the industrial simulation element. Tosey, states the facilitator must, "intervene thoughtfully" (Tosey 2006). The author's experience following the running of many industrial simulations is that support on site should indeed be discreet, but still form a visible part of the simulation. This visibility allows the facilitator to exert some control, be on hand to render bespoke support, but not become the focal point which renders the simulation unrealistic. Support levels also need to be bespoke to the type of learner, and often to individual learners. One valuable scaffolding mechanism is peer group support by completing practical tasks in groups. This ensures that collective knowledge is brought to deal with any problem, and individual participants are not left isolated. Research in to scaffolding methodology forms a vital part of this research.
One issue is that Students traditionally expect to be taught and to have formal tutorial support, (Tosey 2006). The role of a facilitator is described by Tosey as being one who acts in collaboration with the learner in a cooperative enterprise within which leadership roles dependant upon time and purpose may change, (Tosey 2006). As direct leadership of all activities in EBL is sometimes not required, the use of an industrial simulation could be perceived by students as diminishing the role of the lecturer, (Askham 2009). Khan and O'Rourke speak of the need for the tutor to be seen to establish the parameters of the student's work and remain central to the whole activity, (Khan & O'Rourke 2004). One method of establishing the position of the tutor is by giving them a strong senior role within the simulation. This perception of the tutor as owning superior knowledge may be required to prevent a detachment between learner and teacher. These senior roles also allow the tutor/facilitator to nurture the participant students. (Tosey 2006). Establishing the balance between being both discreet and in control forms a vital part of this research.

Industrial simulation relies upon the learner owning adequate prior knowledge and having access to researched information pre-event, (Khan & O'Rourke 2004). The activity designer must ensure that the students actually own the required basic skills and can easily gain access to any additionally required information. This is a vital part of the imposed scaffold. Industrial simulation is about using skills, and the author has found it may be necessary to run demonstration activities, to achieve or at least test basic skill levels, or run classroom activities to embody critical information before exposing the students to the main event. This helps prevent detrimental levels of individual challenge. Facilitation of adequate skill levels, access to knowledge, information and data forms a vital part of this research
Whilst students will always be aware that the simulation is not real, and this is indeed another part of the support scaffolding in that potential failure does not carry industrial consequences, there is a need

for as much realism as possible. It is a small leap for a final year degree student to adopt the role of a newly graduated surveyor, but a huge leap to adopt the role of an experienced chartered surveyor. Likewise the tasks need to be totally commensurate with the role. For a case study to be viable the tasks need to be achievable, if they are not it would send out the wrong signals to the participant students, about the industry they propose to enter.

In summary a successful industrial simulation exercise needs to be well scaffolded, need the tutor to adopt a role as facilitator which does not diminish their effectiveness, requires realism to engage the students, needs to be bespoke to the level of the learner and needs to be fully supported by prior learning, prior skills training, current easily accessible supporting material and a physical tutor presence.

Specialist Work Based Skills for Building Surveying

Initial research in to skills required of a building surveyor, utilises the work of building surveying practice authors, previous academic research in to employer requirements for employability skills, RICS competency guidelines, as well as direct feedback from practice leaders. Hence ideal vocational skills for a graduate building surveyor were established. Consequential to this, the skills training brief became divided in to three parts. These are professional conduct whilst surveying, practical and technical surveying skills and professional report writing skills. The main underpinning skill is that of being able to focus recording and reporting towards the needs of an identified client, and being able to identify the impact of applicable statutory obligations to those client needs, (Glover 2009). Further data in respect of desired skills will be sought from practice leaders through further primary research.

CONCLUSION

The author intends to produce a pedagogy for delivery of a complete vocational building surveying education, to meet the requirements of four identified stakeholders. Analysis of learning approaches indicated that the most suitable teaching approach for imparting work based skills was EBL, through supported activities based upon an industrial simulation. The research methodology employed is that described as Action Research. Data obtained from evaluation of previous simulations drives improvements to future practice. This primary data is supplemented by data from literature and general feedback from other stakeholders. Using this approach the author has incorporated changes to the pedagogy employed in areas such as simulation design, scaffolding provision, provision of supporting material, establishment of the tutor's role within the simulation and organisation of the simulation event. Using an action research approach requires the practitioner to answer two questions. Is my practice as it should be, and can it be improved? (Mcniff & Whitehead 2002). Following a number of action research cycles the author must conclude that feedback from participants and from outcomes achieved suggest that practice has indeed improved, and is much closer to how it should be.

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AN ETHICAL ENERGY POLICY: A SIMPLIFIED PARADIGM ON ELECTRICITY PRICING AND DELIVERY TO SOLVE FUEL POVERTY AND PROMOTE ENERGY EFFICIENT BEHAVIOUR.

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The paper introduces two new concepts; firstly, “Tethered Energy Price” and secondly, “Minimum Energy Provision”. The combined effect of these two energy assumptions allows an investigation into a possible solution to fuel poverty via the delivery of a "Minimum Energy Provision" for essential uses within the home and an increasing energy price based upon consumption. The hypothesis is developed that a dynamic energy price tariff (i.e. TEP) combined with an ethically driven minimum amount of energy provision to all homes (i.e. MEP) could offer a fundamental shift into the definition of fuel poverty and increased commitment into energy efficient technology and behaviour.

Key Words: Fuel Poverty, energy efficiency, energy pricing, energy tariffs, household consumption and investment in energy efficient behaviour.

INTRODUCTION

The challenge of alleviating fuel poverty and promoting energy efficient activity may be framed by the "energy price, fuel poverty dilemma". When policies that affect the cost of energy are introduced (e.g. winter fuel payment, VAT on fuel, the Energy Efficiency Commitment, the Carbon Emission Reductions Target, Warm Front and the Community Energy Saving Programme), they have an effect on consumption patterns; the reduction of the relative price of energy may reduce the level of fuel poverty, but inevitably this cheaper fuel encourages wealthier households to consume more. Conversely if energy prices rise then there is more incentive to save energy, but levels of fuel poverty may also rise. This study looks at this dilemma in the context of a privatised energy industry, and seeks a rapid solution to the wide ranging effects of fuel poor, cold homes.
“Cold housing negatively affects children’s educational attainment, emotional well-being and resilience. In 2009/2010 there were an estimated 25,400 excess winter deaths in other words that means last winter, there were over 200 excess deaths per day.” (Marmot Review Team, 2011).

ETHICS, ENERGY AND AN ACCEPTABLE QUALITY OF LIFE

The hypothesis presented is by this paper is that a “Tethered Energy Price” (TEP) may initiate increased commitment to a low energy consumption strategy and a Minimum Energy Provision (MEP) would support those in fuel poverty. It will be shown that an energy tariff could be introduced which would result in a similar income for the energy providing companies. However, the higher energy consumers using this tariff would pay a significantly greater unit price for energy than the low energy

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consumers. This strategy effects a reversal of the current system where energy is usually charged via a two stepped unit price, where the initial unit price is reduced if a certain consumption threshold is crossed, resulting in a lower price per unit the more energy a consumer uses.
The core element of the paper is the presentation of a principle of tethering the energy price to consumption, simply; “the more you use, the more the energy costs per unit”. In addition to which, there is an investigation into the concept of Minimum Energy Provision (MEP), this is an ethical standpoint that it may be deemed a social responsibility of government to provide energy at no cost, up to a calculated minimum to all the residents of the United Kingdom (UK). This paper investigates as to whether this is possible in a privatised energy grid to offer an element of free energy using the concept of Tethered Energy Prices (TEP).
With regards to the use of energy and the implications of its lack of availability and the effect this may have on the individual there are three areas of context which require discussion. Firstly, a description of the concept of "fuel poverty" and how this defined measure is calculated and defined. Secondly, on how the improving of the energy efficiency of a home may not achieve the positive impact which is often assumed and thirdly, the need of an individual to have access to a limited amount of energy to be able to engage within our modern society.

Fuel Poverty

In 2008, 18% of households in the UK were estimated to be living in fuel poverty (DECC, 2010). Households are considered by the Government to be in 'fuel poverty' if they have to spend more than 10% of their household income on fuel to keep their home in a 'satisfactory' condition. This is defined as 21oC for the main living area and includes the “essential” energy needs i.e. lighting, appliances, water heating and cooking (UKNS, 2011). However, defining a household as fuel poor is determined by the interaction of a number of factors, principally:

- Unit energy costs,
- The energy required to maintain heat & power to the property (i.e. energy efficiency & activities within the building),
- Household income.
- Fuel poverty ratio = fuel costs (i.e. usage x price) ÷ income

(UKNS, 2011).

Models Used for Fuel Poverty Calculation

Fuel price is calculated on the regional fuel mix (i.e. gas, standard electricity, economy7 electricity and heating oils) and fuel payment method (direct debit, standard credit and pre-payment) these are matched against the fuel price data to give the cost per unit of fuel required. The household fuel consumption requirements are modelled based on four factors:

- The size of the property being modelled,
- The energy mix of usage of the household. (Approximately; 55% space heating, 30% lights and appliances, 10% water heating, and 5% cooking),
- Using one of three assumed heating regimes; firstly, “standard” heating, only in the evening and weekend. Secondly, “full” where the household is heated continuously and thirdly “partially” in houses larger than the needs of the occupier (i.e. only parts of the house are heated at any one time),
- The energy efficiency of the household.

ENERGY EFFICIENCY

The issue of energy efficiency as a factor of fuel poverty calculation requires some detailed discussion. The energy efficiency of a household is an important factor affecting the fuel requirement of a home. It is also one of the main variables relating to energy consumption that can be affected by intervention of policy measures including:

- EEC, the Energy Efficiency Commitment
- CERT, the Carbon Emission Reductions Target which replaced EEC in April 2008
- Warm Front
- CESP, the Community Energy Saving Programme

(Local Government Improvement & Development, 2011)
"One of the most sustainable ways of tackling fuel poverty and limiting the impact of fuel price increases is to build energy efficient housing and retrofit the existing housing stock to an energy efficiency level that would make it extremely hard for people to fall into fuel poverty, as space heating accounts for the greatest share of energy use in homes – over 50%." (Marmot Review Team, 2011)
However, the relationship between energy efficiency and energy consumption is more complex than a simple causal relationship where improvements in efficiency are seen to have a direct and proportional reduction in consumption. Many of the poorest households may maintain (under duress) a lower than "satisfactory conditions" within their homes, so improvements in efficiency may allow these households to achieve a more comfortable temperature with the same levels of consumption as prior to any improvements. In addition, there is a second issue, termed the "rebound effect," this occurs when some of the savings from energy efficiency measures are cancelled out by changes in people's behaviour. Evidence from research describes this effect as causing a loss of the "potential savings" of between 10% - 30% of the calculated savings from efficiency measures.
"For every two steps forward we take with below-cost efficiency, rebound effects mean we take one or more steps backwards, sometimes enough to completely erode the initial gains made," Jenkins, (2011)
It is therefore critical to alter the behaviour of an individual as well as improve the performance of a building or reduce the cost of energy. Differences in behaviour can cause significant variations (>300%) even when controlling for differences in housing, appliances, HVAC systems and family size (Janda, 2009).

ENERGY AND SOCIAL RESPONSIBILITY

The UK government does not consider energy as a fundamental right, as it is within the legal rights of an energy provider to cut off residents for non payment of their energy bills. This is not the case for water, as it is impossible for water supply companies to cut off the supply to a household (BBC, 2009), although they have recently sought permission to limit households to a minimum water provision by use of a water restrictor. This technology allows water for essential needs (i.e. drinking, cook & hygiene) but make it very inconvenient for other uses. This concept of a minimum acceptable level of water required for life is the conceptual basis for the MEP. It may be argued that it is reasonable to establish a minimum level of energy for a household in order to engage in the basic activities which are deemed to be a "right" of residents of the UK. However, it is not the actual energy that a household requires, as energy has no intrinsic value, but rather the products or services the energy gives access to and the lifestyle opportunities which are necessary for an "adequate quality of life".
"Although energy itself is not a basic human need, it is critical for the fulfilment of all needs. Lack of access to diverse and affordable energy services means that the basic needs of many people are not being met." (WEHAB, 2002)
Although energy supplies may be cut off by providers there is an established infrastructure to mitigate the problem of payment if an individual is seen as vulnerable or in poverty. For households in financial straits through no fault of their own there are government grants and many energy companies have trust funds to assist until immediate events may be overcome. Suppliers have codes of practice which set out procedures for management of energy purchase through management plans or prepayment meters. It should be noted that "U-Switch" (an independent energy advisory organisation) advise that although pre-payment meters offer an opportunity for managing spending on energy the disadvantages outweigh these advantages; as the unit price of energy is usually higher and these meters remove the opportunity to enrols on pricing incentives which may include money back offers for; direct debit payment and; or combined fuel payments.
There are six basic categories of consumption which require energy a minimum level of consumption:

- Lighting
- Cooking
- Refrigeration
- Hot Water
- Information technology/Small Power Appliances (i.e. radio or television)
- Space Heating

The MEP (in electricity terms) assumptions utilised to calculate this figure now follow, all calculations have been carried out in electricity as this may be used to supply all of the above services.

Lighting

Lighting is one of the most basic needs of an individual and the most cost effective method of producing light is through the use of electricity and Light Emitting Diodes (LEDs). General provision of the established light levels in the home has been defined by the ergonomics specialist Chris Adams (2011) who establishes the following levels in the home:

- Family Room/Home Theatre 300 lux
- General Activity 300 lux
- Task Lighting 500 lux (e.g. reading)
- TV viewing 150 lux

This provision can be delivered by a number of light fittings and energy levels of the LEDs employed. However, for this paper the following assumptions are made:

- At any one time only four lights within the home are on,
- Light is to be provided simultaneously to two rooms and connecting shared space when moving between them,
- Although lighting is required to all the rooms within a home, it is assumed lights are on only the rooms that are being used,
- The lighting technology was assumed to be light emitting diodes (LEDs),
- A LED lamp is assumed to consume 6W while producing the same amount of light as a standard bulb and produces 337 lumens, a similar light output to a 40W.
- Energy Performance Information: 25,000 hrs lifetime (i.e. 8.5 years – 8hrs/day).

Cooking

Modern kitchens may have a number of pieces of equipment which consume energy (e.g. cooker, kettle, microwave and steamer). In addition to which, accessories may be utilised in the preparation of food (e.g. electric tin opener or food mixer). The amount of energy used for cooking has remained very stable over the last 30 years and has even seen a slight decline (Shorrock, 2008). It has therefore been assumed that the total energy utilised for cooking in the UK would be allocated individually to all the residents of the UK. This would in a small amount give an advantage to households which cook in a communal fashion but the difference was deemed negligible with such a small percentage of total domestic energy being consumed by cooking.

Refrigeration

It is assumed that all households require a limited amount of refrigeration. This assumption is based on modern retail practices where significant saving may be made by buying perishable goods in a larger quantity than for just daily use. The energy required to run this fridge is defined with the Energy Saving Trust (EST) website which defines the most energy efficient fridge (i.e. a single highly efficient fridge, “A” Triple star or equivalent) is rated at 120 watts.

Hot Water

It is assumed hot water is required for personal hygiene and food preparation. Although this hot water could be provided in numerous ways it is assumed it is delivered by instant electric hot water boiler. There are a number of domestic items which consume hot water, the EST utilises a "Hot Water Consumption Calculator" on their website This online resource allows the calculation of the energy consumption of "typical" activities; those deemed as a minimum by this paper are;

- Washing machine (0.35kWh/use - 3 uses/week)
- Kettle (0.08kWh/use - 28 uses/week)
- Washing in full kitchen sink (0.38kWh/use - 7 uses/week)
- Shower (1.5kWh/use - 5 uses/week)

Information & Leisure Technology

Access to information and basic entertainment via radio or television was felt a necessary requirement for modern society. This calculation is taken using the most energy efficient technology easily available and at a scale usable in most homes and to include both a single radio (with the ability to play electronic media - rated at 1.7 Watts, 0.5 Watts standby) and television (including the ability to play electronic media and internet connected - rated 16Watts, 1Watt standby).

Sector	Energy Rating (Watts)	Usage	Energy Consumption (kWh/week)	Energy /yr (kWh)	Cost (£0.14/ Unit)
Lighting			1.7		
(x4 lights - 10hrs/day	24	70 hrs/week		87.6	£12
Cooking					
National Av.	-	-	4.6	241	£34
Refrigeration					
Fridge	120	Continuous	20.2	1,051	£147
Hot Water					
Washing machine		3 times/week	1.0	54	£8
Kettle		28 times/week	2.2	112	£16
Sink Washes	-	7 times/week	2.7	140	£20
Shower		5 times/week	7.5	390	£55
Total		-	13.4	696	£97
Entertainment &					
Information	1.7/0.5		0.15	8	£1
Radio	16/1.0	8/16 hrs	1.01	53	£7
TV/DVD					
			1.16	61	£8
Total					
TOTALS			**41**	**2,136**	**£300**

Table 1: Calculation of Minimum Energy Requirements for; Lighting, Cooking, Refrigeration & Small Power
Data taken from: Energy Savings Trust (2011) & Shorrock (2008).

Space Heating

It is assumed that the minimum area required for heating within an average household is one room (i.e. the "partial" model of heating used in the fuel poverty calculations). The amount of energy required to heat this room is calculated using the “Whole House Method” developed by the Institute of Domestic Heating & Environmental Engineers (IDHEE). This method is a simple process to calculate the heat loss of a simplified building type. It is possible to use the energy requirements to keep this room at a stable temperature. The room is assumed to be the average room size in new built homes 15.8m2 in the UK (Joyce, 2011) the room is assumed to be on the ground floor (i.e. assumed no loss of heat through ceiling) and have three external walls. The external walls are assumed to be an insulated cavity wall, with two double glazed windows built into them, with a 33 week heating season.

Room Data: Area: 15.8m2 Ceiling: 2.5m Location Factor: 27.2	Measurement	Heat Loss factor	Energy Loss W/ºC	Heat Loss (Incl. Location factor) (Watts)	Energy Loss/year (kWh)
Window	$6m^2$	3.00 (U Value)	18	490	905
Wall	$24m^2$	0.45 (U Value)	11	294	543
Ceiling	-	-	-	-	0
Floor	$15.8m^2$	0.7 (U Value)	10	301	556
Ventilation	$39.5m^3$	0.25: vent factor	10	269	496
TOTAL	**-**	**-**	**49**	**1,353**	**2,500**

Table 2: Calculation of Heating Requirements of One Room in a Home
The "Whole House Heating" calculation Method taken from the IDHEE.

MINIMUM ENERGY PROVISION

The MEP is calculated by combining the six categories (see Table 3) and establishes an overall energy requirement of 4,636kWh per year. The majority of this energy (54%) is used maintaining a satisfactory temperature of a single room within the home (see Table 2). The next most significant energy use is refrigeration, which consumes nearly a quarter of the MEP (23%). The water heating proportion is slightly more than the general fuel poverty calculation outlined earlier as 15%, but this is probably an effect of assuming electric heating of the water. In addition the cooking energy requirement is as expected 5% and finally the combined consumption of both the appliances and lighting account for 3%. These assumptions establish an average weekly energy requirement of approximately 90kWh which would equate to £12.50 (i.e. assumed 14p/unit). This figure compares with the spending on energy of the 1st decile of the UK income sector (i.e. the lowest paid 10th of the UKs 25.7 million households) which in 2008 spent £12.53 on energy per week (Ashby, 2011).

Sector	Energy/yr (kWh)	Cost (£0.14/unit)	
Lighting	88	£12	2%
Cooking	241	£34	5%
Refrigeration	1,051	£147	23%
Hot water	696	£97	15%
Entertainment & Information	60	£8	1%
Sub total	2,136	£300	46%
Space Heating	2,500	£350	54%
MEP TOTAL	**4,636**	**£650**	**100%**

Table 3: Overall Energy Requirement as Defined as the Minimum Provision

CONCLUSION: EFFECTS OF TEP & MEP

In 2008 the UK domestic energy market represents £24.1 billion per year. The effect of establishing a MEP with a value of £650 to every household in the UK would in effect provide £16.7 billion worth of electricity for essential use. This energy represents 69% of the energy we currently consume, it is therefore necessary to gain a similar return from the remaining 31% of energy consumed (i.e. £7.4 billion or 53 PWh of electricity). It is assumed that this energy represents consumption that is associated with lifestyle choices (e.g. lighting levels, equipment utilisation and lifestyle choices). By increasing the revenue gained from this proportion of the UK's energy consumption it is possible to acquire sufficient revenue to the energy providers for their running (e.g. profit, maintenance, improvement of the grid and development of new generating technology). The graph below outlines the current situation defining this consumption by deciles of the household of the UK. It can be seen that the higher the income the larger the energy consumption, with the highest income deciles consuming more than twice the energy of the lowest.

Solution to the Fuel Poverty Vs Energy Price Dilemma

This paper has outlined a simplified paradigm, where the only energy available is electricity and this is managed both with a MEP and an increasing TEP. It can be seen in Table 5 that the overall revenue from energy consumption is higher using TEP (i.e. £25.4 billion rather than £24.1 billion).
In this stepped price hypotheses, it is possible to start unit price at 2p/unit and then in seven simple doubling the price reaches £1.28/unit (see Table 5). This system would require very obvious thresholds and extensive communications so consumers would have an opportunity to respond to the potential rises to prices prior to crossing any given threshold, so allowing a household the opportunity to reduce their overall consumption e.g. in order to limit payment of a higher priced energy a family might invest in energy efficiency thereby reducing their overall consumption. This obvious response to consumption would be to alter lifestyle choices which have an implication for energy consumption and/or make investments into energy efficient technology or renewable energy. The cost of payback would be calculated using the higher energy price of the next "step" of energy, this in turn would create a transparent and compelling pressure to reduce or offset energy within the home. However, in the environment of more expensive energy the MEP would protect lower income households. In addition, the MEP would reduce fuel poverty to zero at the moment of institution.

Income Deciles	Weekly Spend on Energy	Assumed Energy Consumed (kWh)	Proportion Of Energy Consumed	Yearly Spend on Energy	UK Consumption (Total: 172PWh) (PWh)
1	£12.53	4,654	7.0%	£652	12.0
2	£13.30	4,940	7.4%	£692	12.5
3	£14.65	5,441	8.1%	£762	14.0
4	£16.25	6,036	9.0%	£845	16.0
5	£17.32	6,433	9.6%	£901	16.5
6	£17.34	6,441	9.6%	£902	16.5
7	£18.48	6,864	10.3%	£961	17.5
8	£20.39	7,573	11.3%	£1,060	19.0
9	£21.87	8,123	12.1%	£1,137	21.0
10	£27.89	10,359	15.5%	£1,450	27.0

Table 4: Current Electricity Price and Energy Consumption

Data taken from the Ashby paper 2011.

Tariff	Stepped Unit Price Threshold (kWh)	Unit Price (£/unit)	Tethered Consumption Levels (kWh)
1	0 – 4,636	0.00	4,636
2	50	0.02	4,637 – 4,687
3	100	0.04	4,688 – 4,788
4	200	0.08	4,789 – 4,989
5	400	0.16	4,990 – 5,390
6	800	0.32	5,391 – 6,191
7	1,600	0.64	6,192 – 7,792
8	3,200	1.28	7,793 – 10,993

Table 5: Unit Price of Energy using TEP

It can be seen from Table 6 that with the TEP policy and assuming current consumption levels are maintained, the overall revenue for energy supply companies would actually increase. In addition, the cost of energy for UK households would actually reduce for the poorest half of society (i.e. deciles 1 - 5). Obviously, this effect need not affect government programmes to increase energy efficiency of these poorer households and improve the quality of life of these families. However, the increase in fuel cost for the highest energy consumers could result in increased investment in energy savings and/or microgeneration technologies if consumers act in order to reduce their costs e.g. if significant investment in efficiency measures or renewable energy would limit energy prices to 16p/unit being compelled to pay £1.28/unit, with increased consumption. This in turn would make calculations for simple payback for investment in technology improve significantly.

Although generally wealthier households are less responsive to low energy lifestyle choices, the significant price rises would raise the issue of energy consumption to a higher priority in all but the wealthiest homes. It is hoped that this policy would create a cycle of ever reducing overall consumption but if this effect also resulted in a rising of the unit price of energy it would be possible to maintain profits for the energy supply companies which in turn could invest in more innovative solutions to future energy provision challenges.

Income Deciles	Assumed Energy Consumed	Energy Payment After MEP	Amount of Energy Used on Each Tariff (kWh)							
	(kWh)	(kWh)	2	3	4	5	6	7	8	Tariff
			50	100	200	400	800	1,600	3,200	Unit Threshold
			£0.02	£0.04	£0.08	£0.16	£0.32	£0.64	£1.28	Price
										Total Yearly Fuel Cost
1	4,654	18	18	-	-	-	-	-	-	£0.36
2	4,940	304	50	100	154	-	-	-	-	£17.32
3	5,441	805	50	100	200	400	55	-	-	£102.60
4	6,036	1,400	50	100	200	400	650	-	-	£293.00
5	6,433	1,797	50	100	200	400	800	247	-	£499.08
6	6,441	1,804	50	100	200	400	800	255	-	£504.20
7	6,864	2,228	50	100	200	400	800	678	-	£774.92
8	7,573	2,937	50	100	200	400	800	1,387	-	£1,228.68
9	8,123	3,487	50	100	200	400	800	1,600	337	£1,796.36
10	10,359	5,723	50	100	200	400	800	1,600	2,573	£4,658.44

Table 6: Unit Price of Energy using TEP and MEP

FURTHER RESEARCH

This paradigm needs to be developed with an analysis using the current fuel mix (i.e. including gas, coal renewables etc). In addition, discounted payback calculations for all the possible investments on energy efficiency measures and/or microgeneration need to be made.

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